PERIODICAL Internatl. Comm. Northwest Atl. Fish.
Sampling Yrbk.
1955-56)
W1
Mr. Murphy
D.E.S. Brock
1(1955-56
3.
4.
Library file

INTERNATIONAL COMMISSION

FOR THE

NORTHWEST ATLANTIC FISHERIES

AUG 19
LIBRARY

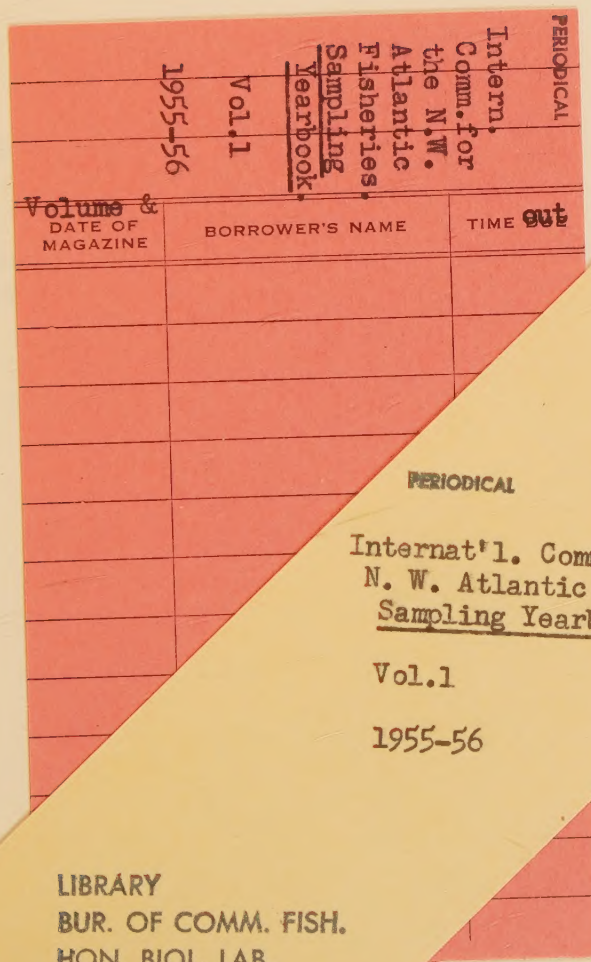
SAMPLING YEARBOOK

Vol. 1

for the years

1955 and 1956

Issued from the Headquarters of the Commission
Halifax, N.S., Canada
1958



PERIODICAL

Internat'l. Comm. for the
N. W. Atlantic Fisheries.
Sampling Yearbook.

Vol.1

1955-56

LIBRARY
BUR. OF COMM. FISH.
HON. BIOL. LAB.

Digitized by the Internet Archive
in 2025

https://archive.org/details/icnaf-sampling-yearbook_1958_1

INTERNATIONAL COMMISSION

FOR THE NORTHWEST ATLANTIC FISHERIES

Sampling Yearbook Vol. 1

1955-1956

Edited by R.S. Keir - Biologist Statistician

Contributors

Canada
D.N. Fitzgerald
A.M. Fleming
W.R. Martin
M.E. Prouse

Denmark
Paul M. Hansen

Germany
Arno Meyer

Iceland
Jón Jónsson
Jakob Magnússon

Norway
Birger Rasmussen

Portugal
Mario Ruivo

Spain
Olegario Rodrigues

United Kingdom
C.E. Lucas
R.S. Wimpenny

United States
J. Clark
G.M. Clarke
F. Dreyer
H.G. Kelly
H.E. Murray
J.P. Wise

Tables prepared for printing by J.M. Maclellan

Issued from the Headquarters of the Commission
Halifax, N.S., Canada

1958

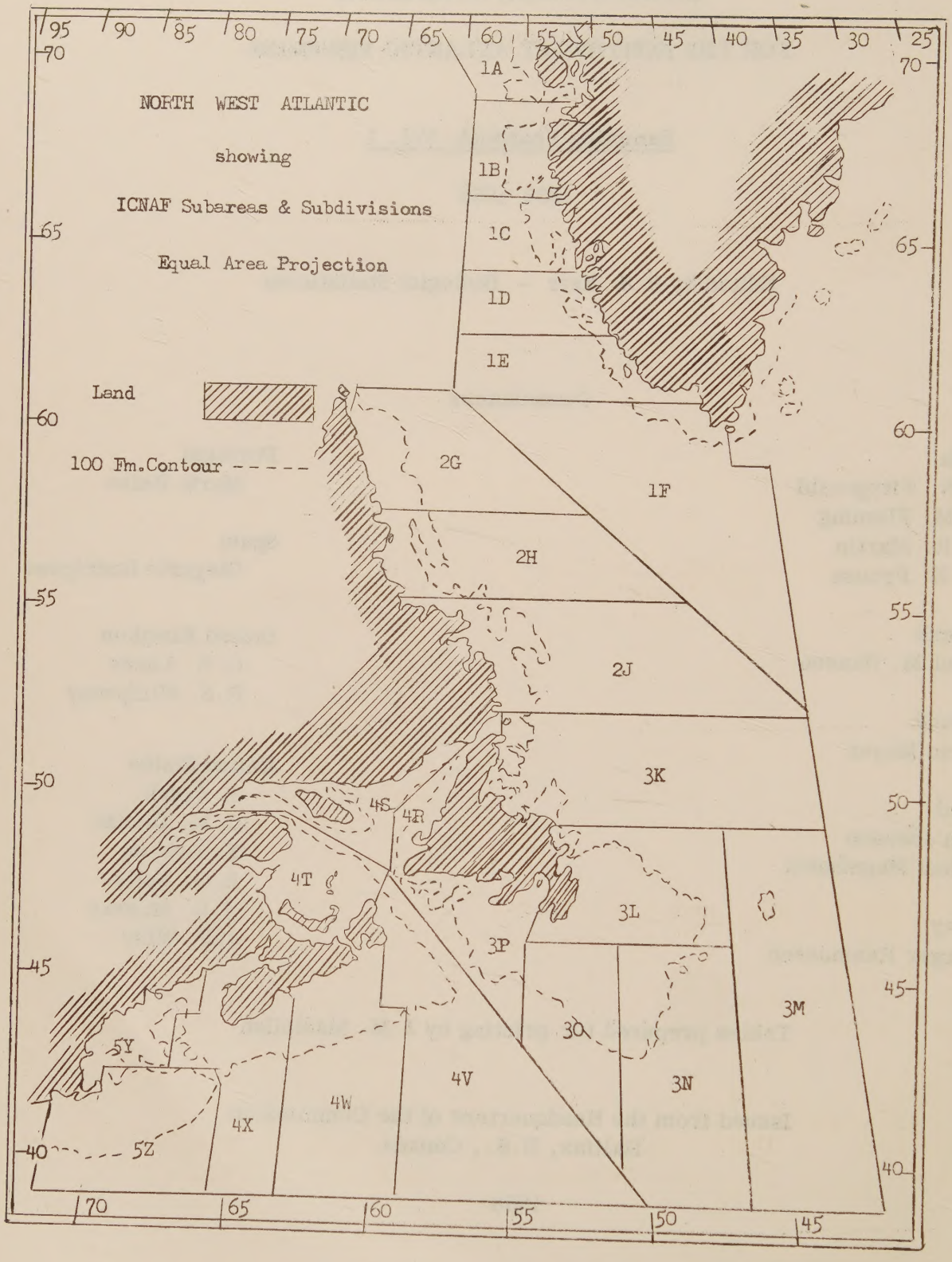


Figure 1 MAP OF THE CONVENTION AREA

LIST OF CONTENTS

Page

Map of the Convention Area 2

Guide to Tables 5

Introduction 7

Notes on the Sampling Data

Canada (Maritimes & Quebec) 11
Canada (Newfoundland) 12
Denmark 13
Germany 14
Iceland 15
Norway 16
Portugal 16
Spain 17
United Kingdom 18
United States 19

CANADA (Maritimes & Quebec)

Table 1	Cod	1955	Length Frequencies		Otter Trawlers	21
2	"	"	"	"	Long Liners	22
3	"	"	"	"	Liners	23
4	"	1956	"	"	Otter Trawlers	24
5	"	"	"	"	Liners (Offshore)	26
6	"	"	"	"	Liners (Inshore)	27
7	Haddock	1955	"	"	Otter Trawlers	28
8	"	"	"	"	Liners	30
9	"	1956	"	"	Otter Trawlers	31
10	"	"	"	"	Liners	33

CANADA (Newfoundland)

11	Cod	1955	Length Frequencies		Otter Trawlers	34
12	"	1955	"	"	Various Gears (Inshore)	35
13	"	1956	"	"	Various Gears	36
14	Haddock	1955	"	"	Otter Trawlers	38
15	"	1956	"	"	Otter Trawlers	39

DENMARK

16	Cod	1956	Length Frequencies	Jig & Longline (Offshore)	40
17	"	"	Age Frequencies	Jig & Longline (Offshore)	42

(Cont'd.)

					Page
	DENMARK (Cont'd.)				
Table 18	Cod	1956	Age Frequencies	Various Gears (Inshore)	43
19-21	"	"	Age/Length Key	Jig & Longline (Offshore)	44
22	Redfish	1952-56	Length Frequencies	Shrimp Trawl (Inshore)	47
	GERMANY				
23	Cod	1956	Length Frequencies	Otter Trawlers	49
24	"	"	Age Frequencies	" "	50
25-33	"	"	Age/Length Keys	" "	51
34	"	"	Weight/Length Data	" "	60
35	Redfish	"	Length Frequencies	" "	61
	ICELAND				
36	Cod	1952-56	Age Frequencies	Otter Trawlers	62
37	Redfish	1954-56	Length Frequencies	Otter Trawlers	62
	NORWAY				
38	Cod	1956	Length Frequencies	Various Gears	63
39	Cod	1956	Age Frequencies	Various Gears	65
	PORTUGAL				
40	Cod	1955	Length Frequencies	Otter Trawlers	67
41	"	"	Age Frequencies	" "	68
42	"	1956	Length Frequencies	" "	69
43	"	"	Length Frequencies	Dory Vessels	72
44	"	"	Age Frequencies	Otter Trawlers	73
45	"	"	Weight/Length Data	" "	76
46	"	"	Age Frequencies	" "	77
	SPAIN				
47	Cod	1953-56	Length Frequencies	Otter Trawlers	79
48-52	"	" "	Age/Length Keys	" "	80
53	Haddock	1954-56	Length Frequencies	" "	85
54-59	"	" "	Age/Length Keys	" "	86
	UNITED KINGDOM				
60	Cod	1956	Length Frequencies	Otter Trawlers	92
	UNITED STATES				
61	Cod	1956	Length Frequencies	Otter Trawlers	93
62-63	Haddock	1955	" "	All Gears	94
64	Redfish	1956	" "	Otter Trawlers	96

GUIDE TO TABLES

Explanation of Guide

The numbers in the guide are page numbers. Where a length frequency is referred to the page number alone is given. Where an age frequency is referred to the page number is followed by the letter A. Where an age frequency is referred to and where the mean size at each age is given, the page number is followed by A'. Where an age/length key is referred to the page number is followed by the letter K. Where a weight/length table is referred to the page number is followed by the letter W.

Where a table refers to a period of time which overlaps two quarters, e.g. March-April, the reference is given twice. Where '(year)' follows a page number the data referred to are not given by month or quarter, but as totals for the year.

NK indicates subdivision not known.

PAGE NUMBERS

Species	Year	ICNAF Area S.D.	OTTER TRAWL				HOOK & LINE AND OTHER GEARS		
			Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Apr-Jun	Jul-Sep	Oct-Dec
COD	1952	1NK	62A(year)						
	1953	1NK	62A(year)						
		3NK	79,80K	79					
	1954	1NK	62A(year)						
		3N		79,81K	79,81K				
	1955	1NK	62A(year)						
		3K				67,68A'			
		3L	34	34, 79	34			35	
		3N		34,79,82K	79,83K				
		3O	34	79					
		3P	34	34		34	35	35	35
		3NK	21		21				
		4T	21	21	21	21			
		4V		79			23		
		4W		21				22	22, 23
		4X					22,23	22, 23	22
	1956	1A						43A	
		1B			69, 70 73A',76W			40,42A',43A 44K,63,65A,72	
		1C		70,74A'				40,42A',45K 63,65A,72	
		1D	43A	49,50A,51K 52K,53K,54K 60W,69,70 74A',75A' 76A',76W	69, 70 75A'	49,50A,55K 56K	41,42A' 43A'	41,42A',46K 64,65A,72	43A

(Cont'd.)

(Cont'd.)

PAGE NUMBERS

Species	Year	ICNAF Area S.D.	OTTER TRAWL				HOOK & LINE AND OTHER GEARS			
			Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
COD	1956	1E		70,76A'				43A	64, 65A	43A
		1F	43A		49,50A,57K 58K,92	43A,49,50A,56K 59K,60W,92(Year)	43A	43A	43A, 64 66A	43A
		1NK	62A(Year)							
		2J			71,77A'	71,77A',78A'				
		3L		36		24		37[1]	37[1]	
		3N		79	79,84K					
		3O	36			36				
		3P						36	26, 36	36
		4T		24	24	24		27	26	26
		4V		25	25				27	
		4W	25	25	25		26	26		
		4X					26, 27	27	26,27	26
		5NK	93	93	93	93				
HADDOCK	1953	3N	86K	86K						
	1954	3N		85, 87K	85, 87K					
	1955	3N			85, 88K	38,85				
		3O	28,38	85, 89K		38				
		3P	38,85,90K	38,85,90K	28,38	28,38				
		4T		28	28	28				
		4V		28	28				30	
		4W	29	28,29	28,29	29		30	30	
		4X		29				30	30	30
		5Y		29						
		5Z	94,95	94,95	94,95	94,95				
	1956	3N			39,85,91	39				
		3O	39	39		39				
		3P	31,39	39	39					
		4T		31	31	31				
		4V	31	31					33	33
		4W	32	31,32	32	32	33	33		
		4X	32			32	33	33		33
REDFISH	1952	1B						47[2]	47[2]	
	1953	1B						47[2]	47[2]	47[2]
	1954	1B					47[2]	47[2]	47[2]	47[2]
		1NK	62(Year)							
	1955	1B						47[2]	47[2]	47[2]
		1F							48[2]	48[2]
		1NK	62(Year)							
	1956	1B					47[2]	47[2]	47[2]	47[2]
		1D		61						
		1F				61	48[2]	48[2]	48[2]	48[2]
		1NK	62(Year)							
		3NOP	96	96	96	97				
		4RST		98	98,99	99				
		4VWX	100	100	101	101				
		5YZ	102	102	103	103				

1) Samples taken with cod trap or pound net as well as by hook & line gear.
2) Samples taken with shrimp trawl.

INTERNATIONAL COMMISSION
FOR THE NORTHWEST ATLANTIC FISHERIES

SAMPLING YEARBOOK VOL. 1
1955-1956

INTRODUCTION

by R.S. Keir

At the Sixth Annual Meeting of the International Commission for the Northwest Atlantic Fisheries in June 1956 it was recommended that:-

> "For each species sampled, each country should report to the Secretariat the sizes, ages, weights, and sexes of the fish sampled, by place and time of capture. The Commission should publish these statistics." (ICNAF, Annual Proceedings, Vol. 6)

This Sampling Yearbook is the first volume of a series which will be published annually as the result of that recommendation.

The Commission has also recommended that the sampling, both of the landings and of the fish discarded at sea, should be intensified and extended, and further that standard methods of sampling and of measuring, recording and compiling the data should be adopted when possible.

This Sampling Yearbook, therefore, has the following objectives.

Objectives

1. To make the sampling data which have been collected on the fisheries of the Northwest Atlantic available to all scientists studying these fisheries; and also

2. To encourage the systematic collection and appraisal of the sampling data needed for the scientific understanding and management of the fisheries resources of the Northwest Atlantic.

3. To promote the use of good sampling techniques and the adoption of standard methods of measuring and recording sampling data in fisheries research in the Northwest Atlantic.

COD

COUNTRY	GEAR \ AREA	SUBAREA 1 A	B	C	D	E	F	SUBAREA 2 G	H	J	SUBAREA 3 K	L	M	N	O	P	SUBAREA 4 R	S	T	V	W	X	S.A. 5 Y	Z
CANADA (M)	Otter Trawl																							
	Hook & Line																							
	Misc. Inshore																							
CANADA (N)	Otter Trawl																							
	Misc. Inshore																							
DENMARK	Jig/Longline																							
FRANCE	Otter Trawl																							
GERMANY	Otter Trawl																							
ICELAND	Otter Trawl																							
ITALY	Otter Trawl	No data on landings: no sampling																						
NORWAY	Otter Trawl																							
	Hook & Line																							
PORTUGAL	Otter Trawl																							
	Dory Vessel																							
SPAIN	Otter Trawl																							
	Pair Trawl																							
U.K.	Otter Trawl																							
U.S.	Otter Trawl																							
TOTAL																								

HADDOCK

CANADA (M)	Otter Trawl																							
	Hook & Line																							
	Misc.																							
CANADA (N)	Otter Trawl																							
SPAIN	Otter Trawl																							
	Pair Trawl																							
U.S.	Otter Trawl																							
TOTAL																								

REDFISH

CANADA[1] (M)	Otter Trawl																							
CANADA[1] (N)	Otter Trawl																							
DENMARK	Otter Trawl																							
GERMANY	Otter Trawl																							
ICELAND	Otter Trawl																							
U.S.	Otter Trawl																							
TOTAL																								

1) Sampling was carried out but is not included in this Volume of the Yearbook

Fig. 1 Distribution of length frequencies included in the Sampling Yearbook in relation to fishing

Key: No fishing ☐ Fishing but no sampling ▤ Fishing and sampling ▦

Data Included:-

Among the many purposes for which sampling of catches or landings of fish may be made, the Sampling Yearbook is limited primarily to sampling carried out to determine the length frequencies, age frequencies, age/length relationships, and other variables which are required in the assessment of fisheries. Fig. 1 summarises the extent of the sampling considered in this issue of the Yearbook. The data include samples taken at sea from the catches of both research and commercial vessels and from the landings of commercial vessels. (See Table A). Not all of the data were in hand in time to be included in this issue, but all such delayed material relevant to the purpose of the Yearbook will be presented in future volumes as it becomes available.

Country	Samples taken from			Sampling stratified by size categories	Samples weighted by quantities landed
	Catches at sea		Onshore		
	Research vessel	Commercial vessel	Commercial landings		
Canada (M)	*	*	√	√	*
Canada (N)	*	*	√	-	√
Denmark	√	-	-	-	-
Germany	-	-	√	√	√
Iceland	-	-	√	-	-
Norway	√	√	-	-	-
Portugal	-	√	-	-	-
Spain	-	√	-	-	-
United Kingdom	-	-	√	√	√
United States	*	*	√	√	√ 1)

1) For cod and haddock

√ - Reported in Sampling Yearbook Vol.1
* - Not reported in Sampling Yearbook Vol. 1

Table A - Summary of Kinds of Sampling Carried out by Countries

Processing for Publication:-

Method of Measurement - The Commission has proposed that the fork length (i.e. from the anterior point of the fish to the end of the median caudal fin ray) recorded to the nearest centimetre be adopted as the standard measure. In this publication all length frequencies have been adjusted (where necessary) into terms of measurement to the nearest centimetre, but conversion from total length to fork length has not been undertaken.

It should be noted that all measurements from Subareas 2, 3, 4, and 5 were made to the fork length. Some of the cod measurements from Subarea 1 were also made to the fork length, but some of the cod and all the redfish measurements from this Subarea were made to the total length.

Length frequencies of cod have been been given in three centimetre groups (0-2 cm., etc.), of haddock in two centimetre groups (0-1 cm., etc.), and of redfish by centimetres.

Table B lists the methods of measurement and grouping in which the data were reported to the Commission.

Number of Significant Figures in the Tables - Length frequencies have been given as parts per thousand (0/00). However, in general, the length frequencies are based on less than a 1000 fish measured. The amount of sampling in any one month/subdivision is generally small and is only approximately representative of the total landings. The data therefore should be used with caution. In many cases sampling from different depth zones and possibly even different stocks in a subdivision are pooled. The number of significant figures given in the length frequencies are therefore greater, generally, than justified by the data.

Similarly, the mean weight of the fish and the estimated number of fish landed are generally given to a larger number of significant digits than justified by the data or by the conversion factors used, e.g. the conversion factor of 1.2 used to convert from gutted weight to round fresh weight may be considered to introduce an error of approximately [illegible].

Conversion Factors Used:- The factors used to convert from gutted or salted weight to round fresh weight are the same as used in the ICNAF Statistical Bulletins (see Vol. 5, 1955, page 13). The most commonly used are:-

1.2	For cod and haddock, gutted head on
3.0	For cod and haddock, green salted, landed in Europe
2.7	For cod and haddock, green salted, landed in North America or Greenland

Country	Species	Unit of Measure	Length Measured	Centimetre Grouping Used	By Sexes
Canada (Mainland)	Cod	nearest cm.	Fork Length	3 cm. groups 0-2 etc.	No
" "	Haddock	nearest cm.	Fork Length	2 cm. groups 0-1 etc.	No
Canada (Nfld.)	Cod	nearest cm.	Fork Length	By centimetres	No
" "	Haddock	nearest cm.	Fork Length	By centimetres	No
Denmark	Cod	cm. below	Total Length	By centimetres	Yes
" "	Redfish	cm. below	Total Length	By centimetres	No
Germany	Cod	cm. below	Total Length	By centimetres	No
" "	Redfish	cm. below	Total Length	By centimetres	No
Iceland	Redfish	nearest cm.	Total Length	3 cm. groups 0-2 etc.	No
Norway	Cod	nearest cm.	Fork Length	By centimetres	Yes
Portugal	Cod	nearest cm.	Fork Length	5 cm. groups 0-4 etc.	No
Spain	Cod	nearest cm.	Fork Length	Usually by cm.[1]	No
" "	Haddock	nearest cm.	Fork Length	Usually by cm.[1]	No
United Kingdom	Cod	cm. below	Total Length	5 cm. groups 0-4 etc.	No
United States	Cod	nearest cm.	Fork Length	3 cm. groups 0-2 etc.	No
" "	Haddock	cm. below[2]	Fork Length	By centimetres	No
" "	Redfish	cm. below[2]	Fork Length	By centimetres	Yes

1) But also by 3 cm. groups (1-3 cm. etc.) and 5 cm. groups (0-4 cm. etc.)
2) All U.S. measurements are now made to the nearest cm.

Table B - Summary of the Units of Measure, Lengths Measured and Centimetre Groupings Used by Member Countries in Reporting Length Frequencies for ICNAF

Notes on the Sampling Data

Canada (Maritimes and Quebec)

Reported by D.N. Fitzgerald and W.R. Martin

Commercial landings of groundfish in the provinces of Nova Scotia, New Brunswick and Prince Edward Island have been continuously sampled for size and age composition since 1945. Sampling emphasis has been placed on landings by offshore vessels at the largest groundfish ports. The sampling data on cod and haddock lengths in 1955 and 1956 have been reported to the Commission. (See summary in Table C).

Landings are normally culled by market categories. Cod are divided into Large (Steak) and Medium (Market) sizes at about 10 pounds fresh gutted weight. Small (Scrod) cod and haddock are mainly less than 2-1/2 pounds gutted weight. Small haddock are sometimes landed round in a separate market category. These market categories are sampled approximately in proportion to the relative numbers of each in a trip landing. When the final weighout is available, the length frequency of the landings was determined by applying weighting factors to each category. Each length frequency was then expressed in 0/00 and samples of landings taken by the same gear in the same month subdivision were added together. The length frequencies of the sexes are not given separately.

Fork length measurements were recorded to the nearest centimetre for each fish. These measurements are presented by 3 cm. groups for cod and 2 cm. groups for haddock. Mesh size is recorded as the approximate inside stretched wet used measurement of an average codend mesh. Hook size is given by number, No. 17 or 6/0 being the smallest commercial groundfish hook, and No. 12 being the large hook used on baited handlines.

Species	Year	Gear	Areas	Time	No. of Samples	No. of Fish	Observations	By Sexes ?
COD	1955	Otter Trawl	Subareas 3,4TW	Months	18	6638	Length Frequencies	No
	1955	Hook & Line	4V, 4W, 4X	" "	20	5837	" "	"
	1956	Otter Trawl	3L, 4T, 4V, 4W	" "	24	7384	" "	"
	1956	Hook & Line	3P,4T,4V,4W,4X	" "	19	5250	" "	"
HADDOCK	1955	Otter Trawl	3OP, 4TVWX, 5Y	" "	34	7330	" "	"
	1955	Hook & Line	4V, 4W, 4X	" "	19	4075	" "	"
	1956	Otter Trawl	3P,4T,4V,4W,4X	" "	45	9424	" "	"
	1956	Hook & Line	4V, 4W, 4X	" "	15	3508	" "	"

Table C Summary of Canadian (Mainland) sampling of cod and haddock landings included in the Sampling Yearbook Vol. 1

Canada (Newfoundland)

Reported by A.M. Fleming and M.E. Prouse

Length frequencies based on sampling of the commercial landings of cod and haddock in 1955 and 1956 have been reported. The numbers and the extent of the sampling are summarised in Table D.

Length measurements were made of the fork length and recorded to the nearest centimetre. Sampling was carried out on shore. The total weight of each sample was obtained, together with the total weight of the species landed from the trip sampled. By means of the weighting factor determined from these data each sample frequency was raised to give the actual numbers of each size in the landings sampled. These raised frequencies were then pooled to give length frequencies by quarters (January - March, etc.), type of gear and subdivision, and then compiled in three centimetre groups (0-2 cm., etc.).

Gear Details:-

Otter Trawl	Mesh size about 2-3/4 inches inside stretched
Handline	Hooks usually #12 Mustad
Inshore Line Trawl	Hooks usually #14 Mustad
Long Line	Hooks usually 6/0 Pfleuger or #17 Mustad

Species	Year	Gear	Areas	Time	No.of Samples	No. of Fish	Observations	By Sexes?
COD	1955	Otter Trawl	3L,3N,3O,3P	Quarters	-	6,415	Length Frequencies	No
		Hook & Line	3L, 3P	Jan-Mar,	-	8,895	" "	"
		Cod Trap	3L	etc.	-	2,611	" "	"
	1956	Otter Trawl	3L, 3O	" "	28	8,793	" "	"
		Hook & Line	3L, 3P	" "	49	10,047	" "	"
		Cod Trap	3L	" "	30	8,793	" "	"
HADDOCK	1955	Otter Trawl	3N,3O,3P	" "	-	46,490	" "	"
	1956	Otter Trawl	3N,3O,3P	" "	148	39,326	" "	"

Table D Summary of Canadian (Newfoundland) sampling of cod and haddock landings included in the Sampling Yearbook Vol. 1

Denmark

Reported by Paul Hansen

Samples of cod were taken from the catches of commercial gears (inshore) and from the catches of the R.V. "Dana" and R.V. "Adolf Jensen" (offshore) as summarised in Table E. The samples were not pooled. Length measurements were made of the total length (end of tail lobes) and recorded to the nearest centimetre below.

A special series of redfish length samples have been taken at intervals of one to

three months from Godthaab and Tunugdliarfik Fjord (since 1952 in the case of Godthaab Fjord). These are of small redfish and permit the study of the growth rate, using Petersen's method, as discussed in the Danish Research Report for 1956, ICNAF Annual Proceedings, Vol. 7. Measurements were made of the total length and recorded to the centimetre below. These measurements have not been adjusted to nearest centimetre or to fork length.

Species	Year	Gear	Areas	Time	No.of Samples	No. of Fish	Observations	By Sexes?
COD	1956	Various, mostly Hook & Line	Inshore 1A, 1B,1D,1E,1F	Months	24	4,021	Age Frequencies	No
	1956	Jig or Longline	Offshore 1BCD	Months	6	883	Age and Length Frequencies	Yes
	1956	Jig or Longline	Offshore 1BCD	Months	3	883	Detailed Data[1)]	Yes
REDFISH	1952-1956	Shrimp Trawl	Inshore 1D,1E	Months	42	23,080	Length Frequencies of small fish	No

1) The length, weight, sex, maturity, and age (otoliths) were recorded for each fish in the offshore samples. This detailed data was reported for 3 of the samples.

Table E Summary of Danish sampling of cod and redfish

Germany — Reported by Arno Meyer

Length frequencies of the 1956 landings of cod and redfish by otter trawlers from Subdivisions 1D and 1F, together with age/length keys and weight/length data for cod, have been reported. A summary of the sampling is given in Table F.

Length measurements were made of the total length (end of tail lobes) and recorded to the centimetre below. The length frequencies were reported to the Commission by centimetres.

Sampling was carried out on shore at the market. Each of the size categories landed were sampled separately and the final length frequency calculated by weighting each length frequency by the quantity landed in the size category from which it was taken and then pooling the frequencies.

The cod were gutted before being measured; the redfish were round except for a few of the larger ones.

Species	Year	Gear	Area	Time	No.of Samples	No. of Fish	Observations	By Sexes ?
COD	1956	Otter Trawl	1D & 1F	By Months	10	4817	Length Frequencies and Age/Length Keys	No
COD	1956	Otter Trawl	1D & 1F	By Months	2	470	Weight/Length Tables	No
REDFISH	1956	Otter Trawl	1D & 1F	By Months	3	680	Length Frequencies	No

Table F Summary of German sampling of cod and redfish landings

Iceland

Reported by Jón Jónsson and Jakob Magnússon

Cod age frequencies (from otoliths) for 1952-1956 and redfish length frequencies for 1954-1956 based on the sampling of the otter trawler landings from Subarea 1 were reported (see Table G). Length measurements were made of the total length (end of lobes of tail), recorded to the nearest centimetre, and compiled in three centimetre groups (0-2 cm.,etc.). Both the age frequencies and length frequencies were reported in graphic form.

Species	Year	Gear	Area	Time	No.of Samples	No. of Fish	Observations	By Sexes?
COD	1952-56	Otter Trawl	Subarea 1	By Year	-	-	Age Frequencies	No
REDFISH	1954-56	Otter Trawl	Subarea 1	By Year	2-3 per year	-	Length Frequencies	No

Table G Summary of Icelandic sampling of cod and redfish landings

Norway — Reported by Birger Rasmussen

Samples of cod were taken at sea from the catches of two vessels, the R.V. "G.O. Sars" of 600 tons and the "Longva", a fishing vessel of 200 tons. All catches were taken with commercial gears. The length and age frequencies (from otoliths) for each sex were reported. A summary of the sampling is given in Table H.

Measurements were made of the fork length and recorded to the nearest centimetre. Samples were not pooled.

Species	Year	Gear	Area	Time	No. of Samples	No. of Fish	Observations	By Sexes?
COD	1956	Bottom Longline	1C,1D,1E	By Months	5	931	Length and Age Frequencies	Yes
COD	1956	Hand Line	1B, 1F	By Months	2	248	Length and Age Frequencies	Yes
COD	1956	Floating Longline	1B	By Months	1	203	Length and Age Frequencies	Yes
COD	1956	Purse Seine	1B, 1F	By Months	2	157	Length and Age Frequencies	Yes

Table H Summary of Norwegian sampling of cod catches in 1956

Portugal — Reported by Mario Ruivo

Sampling at sea of the cod catches (after discarding undersized fish) of the Portuguese otter trawlers and dory vessels has been made in 1955 and 1956 in Subareas 1, 2, 3, and 4, and have partly been included in this volume. Table J summarises the full extent of the sampling. Length frequencies, age frequencies and the mean size at each age by sexes were included in the data collected.

Length measurements were made of the fork length, recorded to the nearest centimetre and were compiled in five centimetre groups (0-4 cm., etc.). Samples were not weighted by the quantity caught; when taken on the same fishing bank at the same time they were generally pooled.

The detailed lists of samples and the sample groupings used were previously reported in ICNAF documents Serial Nos. 454 (Subdivision 2J - 1956), 455 (Subarea 1 - 1956) and 468 (Subdivision 3K - 1955) by Mario Ruivo.

Species	Year	Gear	Area	Time	No.of Samples	No. of Fish	Observations [1]	By Sexes?
(1) Reported in Annual Proceedings Vol. 6								
COD	1955	Otter Trawl	1D	By Months	2	162	Length/Age Frequency	Yes
"	1955	Dory Vessel	1B,1C,1D	By Months	26	2558	Length/Age Frequency	Yes
"	1955	Otter Trawl	2J	By Months	4	1045	Length/Age Frequency	Yes
(2) Reported in this Sampling Yearbook Vol. 1								
COD	1955	Otter Trawl	3K	By Months	14	2582	Length/Age Frequency	Yes
"	1956	Otter Trawl	2J	By Months	22	2309	Length/Age Frequency	Yes
"	1956	Otter Trawl	1B,1C,1D,1E	By Months	54	6021	Length/Age Frequency	Yes
"	1956	Dory Vessel	1B,1C,1D,1E	By Months	9	1800	Length Frequency	No
(3) Not yet reported to the Commission								
COD	1956	Otter Trawl	3K	-	8	800	Length/Age Frequency	Yes
"	"	Otter Trawl	3L	-	43	5390	Length/Age Frequency	Yes
"	"	Otter Trawl	3N	-	1	75	Length/Age Frequency	Yes
"	"	Otter Trawl	3P	-	4	350	Length/Age Frequency	Yes
"	"	Dory Vessel	3L	-	5	400	Length Frequency	No
"	"	Dory Vessel	3N	-	4	450	Length/Age Frequency	Yes
"	"	Dory Vessel	3P	-	1	75	Length/Age Frequency	Yes
"	"	Otter Trawl	4R	-	5	639	Length/Age Frequency	Yes
"	"	Otter Trawl	4S	-	1	300	Length/Age Frequency	Yes
"	"	Otter Trawl	4T	-	3	475	Length/Age Frequency	Yes
"	"	Otter Trawl	4V	-	7	1075	Length/Age Frequency	Yes

1) Where age and length were both determined, the stage of maturity, age at 1st maturity, incidence of parasites, and occasionally weights were also usually determined.

Table J Summary of Portuguese sampling of cod catches in 1955-1956

Spain

Reported by Olegario Rodriguez and Alfonso Rojo

Length frequencies of the cod and haddock catches of Spanish otter trawlers collected at sea for the years 1953-1956 were reported, together with age/length keys. A summary of the sampling is given in Table K. With the exception of one sample

taken in Subdivision 4V, sampling has been confined to Subarea 3.

Length measurements were made of the fork length, recorded to the nearest centimetre. Length frequencies were usually reported in centimetres, but sometimes by five centimetre groups (0-4 cm., etc.) or three centimetre groups (0-3 cm., etc.). Cod ages were based on otoliths, and haddock ages on scales. Samples were not weighted according to the quantity caught. They were added together and the combined frequencies reported.

Species	Year	Gear	Area	Time	No. of Samples	No. of Fish	Observations	By Sexes?
COD	1953	Otter Trawl	Subarea 3	Months	–	600	Length Freq., Age/Length Key	No
	1954	" "	3N	"	–	2590	Length Freq., Age/Length Key	"
	1955	" "	3L	"	–	1243	Length Frequency	"
	"	" "	3N	"	–	2475	Length Freq., Age/Length Key	"
	"	" "	3N	"	–	4072	Length Freq., Age/Length Key	"
	"	" "	3O	"	–	1287	Length Frequency	"
	"	" "	4V	"	–	708	Length Frequency	"
	1956	" "	3N	"	–	3499	Length Freq., Age/Length Key	"
HADDOCK	1953	" "	3N	"	–	45	Age/Length Key	"
	1954	" "	3N	"	–	1045	Length Freq., Age/Length Key	"
	1955	" "	3N	"	–	6152	Length Freq., Age/Length Key	"
	"	" "	3N	"	–	395	Length Frequency	"
	"	" "	3O	"	–	523	Length Freq., Age/Length Key	"
	"	" "	3P	"	–	1953	Length Freq., Age/Length Key	"
	1956	" "	3N	"	–	2422	Length Freq., Age/Length Key	"

Table K Summary of Spanish sampling of cod and haddock catches 1953-1956

United Kingdom

Reported by C.E. Lucas and R.S. Wimpenny

The estimated length frequency of the U.K. cod landings by otter trawlers from Subdivision 1F was estimated from 385 measurements. Measurements were made to the end of the tail lobes (total length) recorded to the centimetre below and compiled in five centimetre groups (0-4 cm., etc.).

Samples were taken on shore at the market from each of the commercial size categories. The final length frequency of the total landings was calculated by weighting each of the separate length frequencies by the quantity landed in the size category from which it was taken and then pooling.

United States

Reported by J. Clark, G.M. Clarke, F. Dreyer
G.F. Kelly, K.E. Murray, and J.P. Wise

The estimated length frequencies of cod (1956), haddock (1955), and redfish (1956) landings were reported. All measurements were made to the fork length. The redfish and haddock were measured to the centimetre below, the cod to the nearest centimetre. The samples were taken on shore from the commercial landings.

The data reported are summarised in Table L.

Compilation of Data:-

(a) Cod: Subarea 5, Otter Trawlers:

Length frequency samples for each quarter (January-March, etc.) by market category (Large, Market, Scrod) were weighted by the total quantity of each category landed for the respective quarter. The weighted numbers of fish were combined into length frequencies of total fish by quarters. The percentage of fish at each centimetre was then computed and finally combined into three centimetre groups (0-2 cm., etc.).

> Note:- The weights landed of mixed categories or of large and market categories combined were not available. Samples of these were therefore prorated into appropriate length frequencies of the market categories for which the total weights landed were available.

(b) Haddock: Subdivision 5Z, Otter Trawlers:

The length frequency samples for each month by market category were pooled and the resulting frequency weighted by the total quantity of each category landed from each unit area. The weighted numbers of fish of each category were then pooled to obtain the total length frequency for haddock for each month for each subdivision. The resulting length frequency then expresses the total removals of haddock from the subdivision for the particular month.

(c) Redfish:

The samples were added directly together (unweighted) and the total length frequencies are given in that form.

Species	Year	Gear	Area	Time	No.of Samples	No. of Fish	Observations	By Sexes?
COD	1956	Otter Trawl	Subarea 5	Quarters (Jan-Mar)	-	3,855	Length Frequency	No
HADDOCK	1955	" "	5Z	By Months	354	27,164	" "	No
REDFISH	1956	" "	3N,3O,3P	" "	-	1,200	" "	Yes
REDFISH	1956	" "	4R,4S,4T	" "	-	2,550	" "	Yes
REDFISH	1956	" "	4V,4W,4X	" "	-	5,300	" "	Yes
REDFISH	1956	" "	5Y, 5Z	" "	-	3,800	" "	Yes

Table L Summary of U.S. sampling of cod, haddock and redfish landings

TABLE 1 CANADA (Maritimes & Quebec) - 1955 LENGTH FREQUENCIES COD

by W.R.Martin
D.N.Fitzgerald

OTTER TRAWLERS - Commercial Landings

Subdivision	3		4T							4W
Month	Feb.	Jul.	Jan.	May	June	July	Aug.	Sept.	Oct.	Apr.
3 cm. group	FREQUENCIES in °/oo									
27-29	-	-	-	-	-	-	-	-	-	3
30-32	-	-	-	-	-	-	-	-	-	11
33-35	-	-	-	-	-	-	-	-	-	4
36-38	-	-	-	-	-	-	-	-	-	2
39-41	-	-	-	20	-	4	4	8	2	18
42-44	-	-	-	82	3	10	8	57	6	13
45-47	5	23	3	230	52	90	20	44	13	49
48-50	29	32	76	182	133	141	118	47	61	49
51-53	37	73	104	141	144	160	152	115	155	80
54-56	33	71	141	62	118	114	157	148	182	117
57-59	32	115	92	52	84	106	100	168	129	96
60-62	39	95	88	80	73	87	64	112	93	99
63-65	57	148	49	50	85	86	49	56	60	108
66-68	59	125	35	32	47	40	40	39	40	75
69-71	25	117	67	35	78	33	32	40	36	73
72-74	43	30	32	13	26	28	35	24	47	60
75-77	56	38	32	6	41	26	39	20	37	62
78-80	182	25	67	6	34	22	37	26	34	39
81-83	204	34	21	6	26	12	36	18	36	20
84-86	102	25	41	-	15	18	31	20	18	8
87-89	28	12	39	3	7	5	18	23	21	5
90-92	46	20	64	-	11	4	14	13	14	2
93-95	9	12	25	-	4	6	9	6	4	2
96-98	9	4	-	-	11	2	10	6	8	2
99-101	-	2	8	-	7	2	4	4	4	-
102-104	-	-	-	-	-	2	4	2	1	1
105-107	-	-	3	-	-	-	4	2	-	3
108-110	-	2	8	-	-	-	5	2	-	-
111-113	-	-	-	-	-	-	3	-	-	-
114-116	-	-	-	-	-	-	1	-	1	-
117-119	-	-	-	-	-	-	2	-	-	-
120-122	-	-	-	-	-	-	1	2	-	-
123-125	-	-	3	-	-	-	-	-	-	-
126-128	-	-	-	-	-	-	1	-	-	-
No. of Samples	1	1	1	1	1	2	4	2	4	1
No. of Fish Measured	309	272	300	300	300	600	1264	600	1500	1193
Mean Wt. of Fish (Kg.)	4.26	2.62	3.76	1.45	2.43	2.07	2.77	2.48	2.46	...
Wt.of Landings Sampled	5	17	83	13	53	15	31	9	290	...
Wt.of Total Landings	948	568	214	1720	2354	2185	3445	2967	3540	2453
Est. No. in Total Landings [1]	0.223	0.217	0.067	1.186	0.969	1.056	1.244	1.196	1.439	...
Range of Depths (Fms.)	...	...	100	60	30-40	30-130	20-60	20-60	30-60	...
Mesh Size(ins.)-manilla	4½ man.	4½ man.	4½ man.	3 man.	3 man.	3 man.	3 man.	3 man	3 man.	4½ man.

1) Millions

TABLE 2 CANADA (Maritimes & Quebec) - 1955 LENGTH FREQUENCIES - COD by W.R.Martin D.N.Fitzgerald

LONG LINERS - Commercial Landings

Subdivision	4W		4X							
Month	July	Nov.	Apr.	May	June[2]	July	Sept.	Oct.	Nov.	Dec
3 cm. group	FREQUENCIES in °/oo									
30-32	-	-	-	-	-	4	-	-	-	-
33-35	-	-	-	-	-	4	-	-	-	-
36-38	7	-	13	-	-	25	50	-	20	13
39-41	14	-	20	-	3	74	53	16	62	54
42-44	34	29	30	10	15	78	86	52	123	113
45-47	71	24	35	37	38	92	82	82	134	119
48-50	79	33	59	97	35	64	98	171	83	118
51-53	102	56	49	80	49	78	120	103	80	72
54-56	90	82	64	73	54	85	116	54	50	78
57-59	111	139	65	47	81	71	101	57	54	71
60-62	93	112	57	53	77	60	77	27	74	71
63-65	78	96	62	77	67	64	54	46	54	60
66-68	51	109	75	80	54	32	32	65	64	43
69-71	66	63	54	93	77	35	32	79	39	31
72-74	24	73	66	67	67	38	12	39	46	34
75-77	27	40	61	47	57	38	19	72	24	21
78-80	27	53	55	53	44	29	11	47	15	21
81-83	30	47	50	53	54	17	10	18	21	19
84-86	18	16	36	43	34	25	13	16	18	12
87-89	28	21	21	33	47	11	8	14	10	14
90-92	-	-	31	10	30	23	6	16	6	11
93-95	9	-	26	13	24	14	5	12	4	4
96-98	9	6	21	20	30	7	4	4	10	6
99-101	3	-	12	7	27	18	8	10	8	7
102-104	13	-	9	3	13	2	2	-	2	2
105-107	3	-	11	-	3	-	-	-	-	2
108-110	3	-	8	3	13	5	2	-	-	1
111-113	3	-	2	-	-	-	-	-	-	1
114-116	6	-	5	-	-	2	2	-	-	2
117-119	-	-	3	-	3	2	-	-	-	-
120-122	-	-	1	-	3	-	1	-	-	-
123-125	-	-	2	-	-	2	-	-	-	1
No. of Samples	1	1	3	1	1	1	2	1	2	3
No. of Fish Measured	300	300	900	300	300	305	600	295	600	1000
Mean Wt. of Fish (Kg.)	2.91	3.05	3.69	6.17	4.17	2.90	2.33	2.22	2.27	2.51
Wt.of Landings Sampled	2	3	60	...	6	1	5	4	8	21
Wt. of Total Landings										
Est. No. in Total Landings[1]										
Range of Depths(Fms.)	24-36	45-50	40-55	30-50	50	30-40	35-50	30-40	40-50	40-50
Hook Size	#15	#15	6/0	#17	6/0	6/0	6/0	6/0	6/0	6/0

1) In Millions 2) Landed in July

TABLE 3 CANADA (Maritimes & Quebec) - 1955 LENGTH FREQUENCIES - COD by W.R.Martin
D.N.Fitzgerald

LINERS - Commercial Landings

Subdivision	Dory Vessel Long Line 4V	Long Line & Hand Line 4X	Hand Line 4W	Hand Line 4X
Month	Apr.	June	Nov.	July
3 cm. group		FREQUENCIES in °/oo		
33-35	-	-	-	3
36-38	-	32	-	20
39-41	-	51	-	65
42-44	-	83	29	91
45-47	5	58	29	131
48-50	23	60	86	82
51-53	100	101	71	64
54-56	117	98	186	73
57-59	145	74	57	69
60-62	138	50	157	45
63-65	101	54	86	37
66-68	84	54	86	61
69-71	61	30	71	33
72-74	47	47	29	29
75-77	40	34	14	12
78-80	20	17	-	19
81-83	13	17	29	19
84-86	13	27	14	11
87-89	23	24	14	26
90-92	3	7	-	15
93-95	13	7	-	26
96-98	3	14	-	19
99-101	13	27	29	15
102-104	7	17	-	8
105-107	10	3	-	4
108-110	13	-	-	-
111-113	3	3	-	4
114-116	-	3	-	4
117-119	-	-	-	4
120-122	-	3	14	-
123-125	-	3	-	4
126-128	-	-	-	-
129-131	-	-	-	-
132-134	-	-	-	4
No. of Samples	1	1	1	1
No. of Fish Measured	300	300	70	267
Mean Wt. of Fish (Kg.)	2.88	3.00	5.44	3.06
Wt. of Landings Sampled	80	3	+	1
Wt. of Total Landings	1146			
Est. No. in Total Landings [1]	0.398			
Range of Depths (Fms.)	...	30-50	16-24	25-35
Hook Size	#16	...	#12	#12

1) In Millions

TABLE 4 CANADA (Maritimes & Quebec) - 1956 LENGTH FREQUENCIES - COD by W.R.Martin
D.N.Fitzgerald

OTTER TRAWLERS (Offshore) - Commercial Samples

Subdivision	3L	4T					
Month	Oct.	May	June	July	Aug.	Sept.	Oct.
3 cm. group		FREQUENCIES in °/oo					
39-41	-	-	1	-	-	-	-
42-44	4	16	14	-	1	2	2
45-47	4	40	52	-	19	24	13
48-50	19	67	72	12	39	44	26
51-53	39	77	87	15	52	33	39
54-56	38	76	115	40	54	35	46
57-59	33	97	160	60	106	97	70
60-62	90	80	127	72	93	113	84
63-65	74	87	97	112	108	79	114
66-68	193	59	56	110	99	75	101
69-71	150	62	49	110	74	54	74
72-74	137	85	39	84	65	41	62
75-77	100	39	38	69	47	69	50
78-80	57	42	32	70	55	78	57
81-83	23	55	27	52	43	61	68
84-86	33	29	11	67	38	80	50
87-89	-	13	6	38	28	51	39
90-92	2	19	7	30	21	26	47
93-95	-	10	3	12	20	12	32
96-98	-	16	4	16	14	16	12
99-101	6	6	2	7	5	8	6
102-104	2	6	-	5	4	1	2
105-107	-	6	1	3	2	-	5
108-110	-	-	-	5	5	1	-
111-113	-	3	-	2	1	-	-
114-116	-	-	-	2	2	-	-
117-119	-	3	-	5	2	-	-
120-122	-	-	-	-	-	-	-
123-125	-	3	-	-	-	-	-
126-128	-	-	-	-	-	-	-
129-131	-	-	-	-	1	-	-
132-134	-	-	-	2	-	-	-
135-137	-	-	-	-	1	-	-
No. of Samples	1	1	3	2	5	2	2
No. of Fish Measured	300	300	1025	600	1580	700	500
Mean Wt. of Fish (Kg.)	3.08	3.05	2.45	3.52	3.24	3.26	3.24
Wt. of Landings Sampled	120	17	44	133	207	92	81
Wt. of Total Landings	561	1288	3005	3517	5440	4463	4144
Est.No. in Total Landings[1]	0.182	0.422	1.227	0.999	1.679	1.369	1.279
Range of Depths (Fms.)	...	125-140	40-150	40-70	20-70	40-60	40-60
Mesh (ins.) or Hook Size	4½ man.	3 man.	3 man.	3 man.	3 man.	3 man.	3 man.

1) In Millions

(Cont'd.)

TABLE 4 CANADA (Maritimes & Quebec) - 1956 LENGTH FREQUENCIES - COD by W.R.Martin
(cont'd) D.N.Fitzgerald

OTTER TRAWLERS (Offshore) - Commercial Samples

Subdivision	4V	4V-W	4W		
Month	Aug.	Apr.	Mar.	Apr.	Aug.
3 cm. group		FREQUENCIES in °/oo			
39-41	6	-	-	-	-
42-44	50	-	-	-	69
45-47	152	10	1	-	69
48-50	214	53	1	3	111
51-53	144	103	8	24	94
54-56	143	117	49	61	58
57-59	155	110	42	71	82
60-62	85	63	46	51	79
63-65	42	50	50	37	65
66-68	4	53	27	17	72
69-71	4	67	24	34	27
72-74	-	47	31	34	69
75-77	-	103	51	54	110
78-80	-	70	56	74	44
81-83	-	44	82	80	8
84-86	-	20	85	89	10
87-89	-	24	81	88	6
90-92	-	3	84	65	10
93-95	-	3	70	62	4
96-98	-	-	54	36	-
99-101	-	10	40	39	6
102-104	-	-	40	23	-
105-107	-	-	21	7	4
108-110	-	21	18	20	-
111-113	-	-	18	7	-
114-116	-	3	9	10	-
117-119	-	3	4	10	-
120-122	-	-	5	3	-
123-125	-	10	5	-	-
126-128	-	7	-	-	-
129-131	-	7	-	-	-
132-134	-	-	-	-	-
135-137	-	-	-	-	-
No. of Samples	1	1	4	1	1
No. of Fish Measured	300	300	1179	300	300
Mean Wt. of Fish (Kg.)	1.49	3.22	5.45	5.00	2.63
Wt. of Landings Sampled	107	35	319	10	6
Wt. of Total Landings	127	3677[2]	3538	2295	209
Est.No. in Total Landings[1]	0.085	1.142	0.649	0.459	0.079
Range of Depths (Fms.)	...	23-40	...	38-40	...
Mesh (ins.) Manila	4½ man.	4½ man.	4½ man.	3 man.	4½ man.

1) In millions
2) Total Cod landings by Canadian Otter Trawlers in 4V Apr. and 4W Apr.

TABLE 5 CANADA (Maritimes & Quebec) - 1956 LENGTH FREQUENCIES - COD - by W.R.Martin
D.N.Fitzgerald

LINERS (Offshore) - Commercial Samples

	Long Liners					Dory Vessel Long Line		
Subdivision	4T		4X			3P	4W	
Month	Aug.	Oct.	Mar.	Sept.	Oct.	Aug.	Mar.	Apr.
3 cm. group	FREQUENCIES in °/oo							
33-35	-	-	-	-	-	-	-	-
36-38	-	-	-	9	28	-	-	-
39-41	-	-	4	10	56	-	2	-
42-44	4	6	11	24	93	2	3	2
45-47	4	10	68	23	60	9	7	8
48-50	18	20	101	8	28	21	21	12
51-53	18	18	85	20	56	44	26	25
54-56	25	22	123	37	28	53	61	33
57-59	29	36	97	63	79	38	56	90
60-62	115	66	76	175	70	60	77	103
63-65	76	82	80	67	65	98	77	79
66-68	38	92	52	78	42	109	63	72
69-71	40	87	76	86	112	54	56	66
72-74	75	74	28	60	116	56	63	54
75-77	88	70	40	63	28	53	49	46
78-80	80	94	28	67	42	81	38	62
81-83	58	77	38	41	23	96	50	56
84-86	67	64	27	40	14	55	41	66
87-89	45	60	16	36	9	65	47	38
90-92	38	40	9	32	5	23	49	37
93-95	45	20	16	29	23	22	45	26
96-98	13	26	7	18	14	12	30	44
99-101	32	8	5	7	5	10	37	22
102-104	10	12	7	-	5	5	22	19
105-107	10	8	2	4	-	8	16	14
108-110	10	4	2	-	-	1	6	14
111-113	13	4	-	-	-	4	23	4
114-116	13	-	-	-	-	2	9	4
117-119	13	-	-	-	-	6	12	-
120-122	3	-	-	-	-	6	4	-
123-125	13	-	-	-	-	2	1	-
126-128	6	-	-	-	-	1	1	-
129-131	-	-	-	-	-	2	5	2
132-134	3	-	-	-	-	-	-	-
135-137	-	-	-	-	-	-	1	-
No. of Samples	1	2	1	1	1	2	3	2
No. of Fish Measured	300	600	300	300	215	600	900	600
Mean Wt. of Fish (Kg.)	4.99	3.90	3.06	2.95	3.10	4.04	4.63	4.44
Wt. of Landings Sampled	6	10	2	4	0.7	142	60	85
Wt. of Total Landings	356	171	51	10	103	683	694	1068
Est.No. in Total Landings [1]	0.071	0.044	0.017	0.003	0.033	0.169	0.150	0.241
Range of Depths (Fms.)	17	20-25	50-53	50	35-50	...	...	35-50
Hook Size [2]	#15	#15	6/0	6/0	6/0	#16	#16	#16

1) In Millions 2) See page 12 for description of hook sizes

TABLE 6 CANADA (Maritimes & Quebec) - 1956 LENGTH FREQUENCIES - [illegible] by W.R.Martin
D.N.Fitzgerald

LINERS (Inshore) - Commercial Samples

	Hand Liners Inshore Jigger		Long Liners Inshore			
Subdivision	4T		4V	4X		
Month	May	June	Sept.	Feb.	June	Nov.
3 cm. group	FREQUENCIES in °/oo					
33-35	-	-	-	-	-	10
36-38	-	-	-	14	7	16
39-41	-	-	-	41	35	63
42-44	-	-	36	47	35	84
45-47	-	3	48	84	49	84
48-50	-	3	99	71	76	99
51-53	-	23	142	38	83	52
54-56	-	7	181	63	56	79
57-59	10	43	121	36	56	37
60-62	35	60	99	18	62	68
63-65	25	63	62	36	104	52
66-68	50	90	74	9	56	52
69-71	50	83	37	36	83	52
72-74	55	53	25	18	42	26
75-77	65	70	17	18	28	47
78-80	115	87	10	75	49	21
81-83	160	83	9	88	42	10
84-86	105	93	9	44	14	16
87-89	90	80	-	56	42	31
90-92	100	67	4	91	35	37
93-95	40	30	9	44	7	42
96-98	65	27	-	29	7	16
99-101	25	7	-	35	7	5
102-104	-	10	-	9	7	-
105-107	10	7	-	-	7	-
108-110	-	7	-	-	7	-
111-113	-	3	-	-	7	-
114-116	-	-	-	-	-	-
117-119	-	-	-	-	-	-
120-122	-	-	-	-	7	-
123-125	-	-	-	-	-	-
126-128	-	-	-	-	-	-
129-131	-	-	-	-	-	-
132-134	-	-	-	-	-	-
135-137	-	-	-	-	-	-
No. of Samples	1	1	1	1	1	1
No. of Fish Measured	200	300	300	300	144	191
Mean Wt. of Fish (Kg.)	5.01	5.32	1.87	4.32	2.42	2.84
Wt. of Landings Sampled	...	2	5	3	0.3	0.5
Wt. of Total Landings [1]	...	...	...	...	...	...
Est.No. in Total Landings [1]	...	...	...	...	...	...
Range of Depths (Fms.)	3	2-3	18-24	40-50	40-50	52-54
Hook Size [2]	#12	#12	#15	6/0	6/0	6/0

1) In Millions 2) See page 12 for description of hook sizes

TABLE 7 CANADA (Maritimes & Quebec) - 1955 LENGTH FREQUENCIES - HADDOCK by W.R.Martin
D.N.Fitzgerald

OTTER TRAWLERS - Commercial Landings

Subdivision	3O	3P		4T			4V			4V-W	
Month	Feb.	July	Oct.	May	July	Oct.	May	June	Aug.	June	Aug.
2 cm. group				FREQUENCIES in °/oo							
28-29	7	-	-	-	-	-	-	-	-	-	-
30-31	7	-	-	-	-	-	-	-	-	-	-
32-33	3	-	-	-	-	-	-	-	-	-	-
34-35	7	-	-	-	-	4	-	-	-	-	-
36-37	77	2	10	34	2	10	-	-	-	-	-
38-39	193	30	210	40	31	26	-	-	6	-	24
40-41	327	100	345	46	43	57	-	4	-	-	28
42-43	200	290	310	15	60	81	5	18	40	-	48
44-45	103	278	115	16	36	94	57	76	167	88	91
46-47	40	185	10	30	72	108	171	169	207	126	145
48-49	23	80	-	44	73	100	248	209	204	100	157
50-51	10	22	-	75	125	111	224	192	181	242	132
52-53	3	12	-	105	129	83	114	124	125	130	102
54-55	-	-	-	88	134	90	76	109	33	113	98
56-57	-	-	-	54	101	64	62	35	29	70	72
58-59	-	-	-	109	90	75	14	43	4	58	36
60-61	-	-	-	122	46	32	19	12	4	38	26
62-63	-	-	-	95	29	33	10	6	-	20	14
64-65	-	-	-	37	16	18	-	-	-	12	10
66-67	-	-	-	31	6	13	-	-	-	5	11
68-69	-	-	-	37	1	2	-	-	-	2	2
70-71	-	-	-	3	4	-	-	-	-	-	2
72-73	-	-	-	14	-	-	-	-	-	-	-
74-75	-	-	-	7	1	2	-	-	-	-	-
76-77	-	-	-	-	-	-	-	-	-	-	-
No. of Samples	1	2	1	1	3	2	1	1	1	1	2
No. of Fish Measured	300	400	200	300	562	367	210	200	200	200	400
Mean Wt. of Fish (Kg.)	...	0.80	0.77	1.87	1.46	1.40	1.29	1.25	1.24	1.49	1.38
Wt.of Landings Sampled	...	27	9	12	23	10	56	79	61	58	56
Wt. of Total Landings	485	1378	1196	578	206	250	341	856	202	1099[2]	621[2]
Est. No. in Total Landings[1]	...	1.722	1.553	0.309	0.141	0.179	0.264	0.685	0.163	0.738[2]	0.450[2]
Range of Depths (Fms.)	76	25-27	24-25	...	15-30	15-20	...	20-22	20-24	22-26	20-32
Mesh Size[3] (inches)	3 m.	2¾ m.	4½ m.	2¾ m.	3¼ n.	2¾ m.	3¼ m.	4½ m.	4½ m.	4½ m.	4½ m.

1) In millions

2) The combined total for 4V and 4W

3) m - indicates manila, n - nylon.

(Cont'd.)

TABLE 7 CANADA (Maritimes & Quebec) - 1955 LENGTH FREQUENCIES - HADDOCK by W.R.Martin
(cont'd) D.N.Fitzgerald

OTTER TRAWLERS - Commercial Landings

Subdivision	4W										4X	5Y
Month	Jan.	Feb.	Mar.[2]			Apr.	June	July	Sept	Nov.	June	June
2 cm. group			FREQUENCIES in °/oo									
28-29	-	-	-	-	-	-	-	-	-	-	-	-
30-31	-	-	-	-	-	-	-	-	-	-	-	-
32-33	-	-	-	-	-	-	-	-	-	-	19	-
34-35	-	-	-	-	-	-	-	-	-	-	48	-
36-37	-	-	-	-	-	-	-	-	-	-	100	25
38-39	-	-	-	-	2	-	-	13	50	-	147	55
40-41	2	-	-	6	10	5	36	25	212	12	249	75
42-43	17	-	-	18	21	24	18	47	127	30	163	135
44-45	25	27	7	36	46	60	98	64	145	53	81	80
46-47	46	33	22	36	75	64	95	131	138	152	49	110
48-49	63	84	25	98	78	86	101	124	144	168	22	50
50-51	105	115	91	162	111	116	199	173	64	202	49	65
52-53	120	119	70	195	104	127	148	123	39	129	22	80
54-55	113	123	112	204	134	94	95	101	22	101	27	95
56-57	92	127	104	133	108	70	60	78	22	78	11	65
58-59	122	122	91	29	95	99	53	57	22	50	-	70
60-61	63	54	144	18	76	94	14	26	6	6	11	20
62-63	77	83	86	24	39	61	46	19	6	11	-	40
64-65	63	29	80	27	42	42	14	7	-	-	-	15
66-67	38	44	112	15	30	33	11	10	-	11	5	20
68-69	22	15	48	3	18	19	7	1	-	-	-	-
70-71	23	15	11	-	4	9	-	-	-	-	-	-
72-73	2	5	-	-	5	-	-	-	-	-	-	-
74-75	7	-	-	-	1	-	4	-	-	-	-	-
76-77	2	-	-	-	1	-	-	-	-	-	-	-
No. of Samples	3	1	1	1	3	1	1	3	1	1	1	1
No. of Fish Measured	612	200	200	339	750	200	200	690	200	200	200	200
Mean Wt. of Fish (Kg.)	2.16	1.96	2.37	1.73	1.77	1.81	1.47	1.35	1.14	1.44	0.86	1.14
Wt.of Landings Sampled	117	24	57	30	104	23	34	103	35	26	3	2
Wt. of Total Landings	873	1468	2894	2894	2894	1750	243	451	498	175	274	19
Est. No. in Total Landings[1]	0.404	0.749	...	...	...	0.967	0.165	0.334	0.437	0.122	0.319	0.017
Range of Depths (Fms.)	40-70	...	55-90	...	...	30-70	28-32	23-37	27-32	28-48	20-25	30
Mesh Size (inches)[3]	4½ m.	3 m.	4⅜ n.	3 m.	4½ m.	4½ m.	4½ m.	4½ m.	4½ m.	4½ m.	Small	3 m.

1) In Millions
2) Separate length frequency for each mesh size
3) m - indicates manila, n - nylon.

TABLE 8 CANADA (Maritimes & Quebec) - 1955 LENGTH FREQUENCIES - HADDOCK by W.R.Martin
D.N.Fitzgerald

LINERS - Commercial Landings

	Dory Vessels Long Line	Long Liners							
Subdivision	4W	4V	4W		4X				
Month	Apr.	July	June	July	Apr.	June	Sept.	Nov.	Dec.
2 cm. group	FREQUENCIES in °/oo								
36-37	-	-	-	-	-	12	4	18	4
38-39	-	-	3	-	3	15	16	34	14
40-41	-	-	-	-	16	42	24	43	37
42-43	-	5	10	25	33	50	18	59	53
44-45	48	-	14	85	48	60	52	74	53
46-47	49	15	43	65	51	105	94	80	58
48-49	152	10	76	90	61	177	116	117	71
50-51	146	15	158	150	86	140	152	158	122
52-53	86	75	165	140	67	90	126	112	120
54-55	124	130	134	125	109	82	98	93	114
56-57	109	140	165	150	106	54	88	55	108
58-59	86	120	77	105	87	57	70	51	70
60-61	76	85	82	30	90	38	43	44	63
62-63	48	120	46	10	76	30	50	27	48
64-65	14	75	10	15	70	22	22	17	27
66-67	33	80	15	-	43	8	12	13	15
68-69	33	60	5	10	33	8	2	3	12
70-71	-	45	-	-	12	5	2	2	3
72-73	-	10	-	-	5	-	2	1	4
74-75	5	-	-	-	-	2	2	-	2
76-77	-	10	-	-	5	-	-	-	-
78-79	-	-	-	-	-	-	-	-	-
80-81	-	-	-	-	-	-	-	-	-
82-83	-	-	-	-	-	-	-	-	-
84-85	-	-	-	-	-	-	-	-	1
No. of Samples	1	1	1	1	3	2	2	3	5
No. of Fish Measured	200	200	200	200	600	600	400	675	1000
Mean Wt. of Fish (Kg.)	1.77	2.29	1.71	1.80	2.06	1.54	1.70	1.60	1.80
Wt.of Landings Sampled	6	1	3		59	2	3	2	20
Wt. of Total Landings	190								
Est. No. in Total Landings [1]	0.107								
Range of Depths (Fms.)	40	21-33	38-60	24-36	50	30-50	40-50	25-50	40-55
Hook Size	#16	#15	6/0	#15	6/0	6/0	6/0	6/0	6/0

1) in Millions

TABLE 9 CANADA (Maritimes & Quebec) - 1956 LENGTH FREQUENCIES - HADDOCK by W.R.Martin
D.N.Fitzgerald

OTTER TRAWLERS - Commercial Landings

Subdivision	3P	4T				4V			4V-W
Month	Feb.	May	June	Aug.	Nov.	Jan.	Apr.	May	May
2 cm. group		FREQUENCIES in °/oo							
24-25	-	-	-	-	-	-	-	-	-
26-27	-	-	-	-	-	-	-	-	-
28-29	-	-	-	-	-	-	-	-	-
30-31	-	-	-	-	-	-	-	-	-
32-33	-	-	-	1	-	-	-	-	-
34-35	-	-	-	-	-	-	-	-	-
36-37	-	-	-	2	-	-	-	-	6
38-39	-	2	6	19	-	9	6	-	13
40-41	-	10	51	53	4	26	26	-	35
42-43	92	32	90	119	18	88	53	32	38
44-45	265	62	184	147	27	44	44	60	35
46-47	234	60	248	243	82	35	62	103	78
48-49	195	62	132	150	120	27	118	90	118
50-51	82	96	55	125	194	36	174	168	177
52-53	48	64	47	60	168	62	142	97	123
54-55	24	54	32	21	98	142	135	82	101
56-57	19	79	40	20	92	156	83	71	95
58-59	5	75	25	59	12	56	93	34	71
60-61	19	112	29	9	54	80	72	65	62
62-63	10	88	36	8	32	58	23	65	-
64-65	5	66	14	5	30	53	12	54	28
66-67	5	46	4	6	10	40	5	22	28
68-69	-	52	4	1	8	18	2	11	11
70-71	-	16	4	-	6	31	-	11	6
72-73	-	13	-	1	-	-	2	-	-
74-75	-	5	-	-	-	-	-	-	-
76-77	-	5	-	-	-	-	2	-	-
78-79	-	2	-	-	-	-	-	-	-
80-81	-	-	-	1	2	-	-	-	-
82-83	-	-	-	-	-	-	-	-	-
84-85	-	-	-	-	-	-	-	-	-
No. of Samples	1	2	1	5	2	1	2	1	1
No. of Fish Measured	200	400	200	1000	380	200	400	200	200
Mean Wt. of Fish (Kg.)	1.10	1.84	1.28	1.12	1.83	2.05	1.49	1.57	1.64
Wt.of Landings Sampled	110	5	2	60	3	37	76	26	12
Wt. of Total Landings	4800	272	833	405	245	71	1076	811	1603
Est. No. in Total Landings [1]	4.364	0.149	0.651	0.362	0.134	0.035	0.722	0.517	0.977
Range of Depths (Fms.)	...	50-90	100-140	18-20	25-30	...	...	20-28	34-37
Mesh Size (inches)[2]	3 m.	3 m.	3 m.	3 m.	3 m.	4½ m.	4½ m.	4½ m.	4½ m.

1) In millions

2) m - indicates manila, n - nylon

(Cont'd.)

TABLE 9 CANADA (Maritimes & Quebec) - 1956 LENGTH FREQUENCIES - HADDOCK by W.R.Martin
(cont'd) D.N.Fitzgerald

OTTER TRAWLERS - Commercial Landings

Subdivision	4W											4X [4]	
Month	Jan.	Feb.	Mar.	Apr. [2]		June [2]		July	Aug.	Oct.	Nov.	Mar.	Nov.
2 cm. group	FREQUENCIES in °/oo												
24-25	2	–	–	–	–	–	–	–	–	–	–	–	–
26-27	–	–	–	–	–	–	–	–	–	–	–	–	9
28-29	–	–	–	–	–	–	–	–	–	–	–	–	39
30-31	–	–	–	–	–	–	–	–	–	2	–	–	42
32-33	18	–	–	–	–	–	–	–	–	7	–	–	39
34-35	18	–	–	–	–	5	–	16	–	15	–	–	22
36-37	40	2	–	–	–	10	16	44	6	22	5	19	51
38-39	121	12	2	1	35	35	123	131	20	33	20	108	132
40-41	257	62	15	24	70	104	244	210	47	81	89	83	221
42-43	165	60	35	73	132	307	250	158	83	176	129	127	173
44-45	56	61	55	80	105	302	122	128	180	250	193	99	83
46-47	32	138	67	81	54	59	54	80	180	205	179	120	42
48-49	40	90	71	81	54	50	52	30	188	97	136	99	48
50-51	49	95	148	106	112	21	48	59	100	56	76	60	37
52-53	58	80	118	107	112	26	25	44	60	22	36	53	28
54-55	54	92	129	120	96	37	23	48	30	13	41	40	24
56-57	16	72	99	86	62	32	24	30	31	9	41	54	6
58-59	32	61	66	65	69	5	2	6	29	8	41	36	2
60-61	13	44	68	57	38	–	9	8	26	1	5	31	2
62-63	16	63	35	38	19	–	–	2	17	1	5	23	–
64-65	6	24	49	45	19	–	2	–	5	1	5	16	2
66-67	4	30	29	18	12	–	–	6	–	–	–	20	–
68-69	2	10	12	11	12	5	–	–	–	–	–	5	–
70-71	–	4	–	3	–	–	2	–	–	–	–	2	–
72-73	–	–	–	3	–	–	–	–	–	–	–	–	–
74-75	–	–	–	1	4	–	–	–	–	–	–	2	–
76-77	–	–	–	–	–	–	–	–	–	–	–	–	–
78-79	–	–	–	–	–	–	–	–	–	–	–	–	–
80-81	–	–	–	1	–	–	–	–	–	–	–	–	–
No. Samples	3	2	3	7	1	1	2	2	2	3	1	1	1
No. Fish Measured	600	400	600	1400	200	200	400	400	400	600	200	300	544
Mean Wt. Fish (Kg.)	1.04	1.64	1.69	1.62	1.44	1.28	1.04	1.02	1.04	1.00	1.19	1.34	...
Wt. Landings Sampled	166	49	125	190	21	75	139	170	52	31	21	12	...
Wt. Total Landings	1029	764	2239	2653	2653	793	793	1739	1846	746	417	145	—
Est. No. in Total Landings [1]	0.989	0.466	1.325	...	...	...	0.762	1.705	1.775	0.746	0.350	0.108	—
Range Depths (Fms.)	22-60	...	...	...	38-45	...	15-30	19-30	...	...	...	50-55	...
Mesh Size (inches) [3]	4½ m.	4½ m.	4½ m.	3 m.	4½ m.	3 m.	4½ m.	4½ m.	4½ m.	3 m.	3 m.	3 m.	1½cc

1) In Millions
2) Separate length frequencies for each mesh size.
3) m – indicates manila, cc – cotton cover
4) Experimental catch.

TABLE 10 CANADA (Maritimes & Quebec) - 1956 LENGTH FREQUENCIES - HADDOCK by W.R.Martin
D.N.Fitzgerald

LINERS - Commercial Landings

	Dory Vessels Long Line		Long Liners						
Subdivision	4W		4V		4X				
Month	Mar.	Apr.	Sept.	Dec.	Feb.	Mar.	Apr.	Nov.	Dec.
2 cm. group	FREQUENCIES in °/oo -								
34-35	-	-	-	-	10	-	-	-	-
36-37	-	-	-	-	7	10	-	-	5
38-39	6	2	-	-	14	11	-	3	5
40-41	25	9	25	-	35	20	-	20	32
42-43	44	29	20	-	46	21	2	26	82
44-45	18	43	50	15	18	44	11	31	94
46-47	25	56	40	10	18	57	12	60	60
48-49	46	50	95	40	83	87	32	64	48
50-51	88	122	75	115	72	112	53	82	68
52-53	98	136	45	95	94	94	119	96	114
54-55	127	106	85	115	126	126	112	126	100
56-57	103	129	150	95	94	103	156	168	86
58-59	103	113	85	125	60	102	131	64	77
60-61	116	96	100	70	72	66	131	104	83
62-63	82	38	110	40	88	64	73	54	61
64-65	43	26	50	75	60	43	58	44	36
66-67	46	18	30	90	50	17	54	22	26
68-69	12	16	10	40	33	19	34	20	8
70-71	5	13	15	15	16	4	10	8	8
72-73	8	-	5	45	-	4	10	2	6
74-75	2	-	-	5	-	-	-	2	3
76-77	-	-	5	-	6	-	5	-	-
78-79	-	-	5	-	-	-	-	-	-
80-81	2	-	-	10	-	-	-	-	-
No. of Samples	2	2	1	1	1	4	1	2	1
No. of Fish Measured	400	408	200	200	200	800	300	400	600
Mean Wt. of Fish (Kg.)	1.95	1.76	2.01	2.12	2.12	1.95	2.29	1.72	1.85
Wt.of Landings Sampled	32	48	1	2	1	10	21	...	5
Wt. of Total Landings	509	359							
Est. No. in Total Landings 1)	0.261	0.204							
Range of Depths (Fms.)	30-60	...	18-24	40-54	40-50	40-53	50	50	50
Hook Size	#16	#16	#15	#15	6/0	6/0	6/0	6/0	6/0

1) In millions

TABLE 11 CANADA (Newfoundland) - 1955 LENGTH FREQUENCIES - COD

by A.M.Fleming
M.E.Prouse

OTTER TRAWLERS (Offshore) - Commercial Samples

Subdivision	3L			3N	3O	3P		
Month or Quarter	Jan.-Mar.	Apr.-June	July-Sept.	Apr.-June	Jan.-Mar.	Jan.-Mar.	Apr.-June	Oct.-Dec.
3 cm. group	FREQUENCIES in °/oo							
36-38	-	2	-	-	-	-	-	-
39-41	-	2	-	-	-	-	-	-
42-44	3	1	3	-	1	-	-	-
45-47	25	8	18	-	5	12	-	31
48-50	19	15	62	-	18	43	6	101
51-53	24	43	77	10	77	102	81	86
54-56	50	84	112	82	157	169	93	152
57-59	95	150	136	174	204	189	158	152
60-62	104	153	124	200	177	175	140	97
63-65	131	162	166	213	129	124	140	125
66-68	104	114	98	145	79	63	131	55
69-71	134	85	68	68	66	47	83	43
72-74	72	48	62	60	24	38	74	43
75-77	93	34	41	19	31	21	36	35
78-80	71	27	21	12	17	7	21	27
81-83	42	17	3	12	11	6	21	12
84-86	25	15	9	2	3	2	6	8
87-89	3	13	-	2	1	2	-	12
90-92	4	6	-	-	1	-	-	8
93-95	3	8	-	-	-	-	3	-
96-98	-	5	-	-	-	-	3	4
99-101	-	3	-	-	-	-	-	4
102-104	-	1	-	-	-	-	-	4
105-107	-	2	-	-	-	-	-	4
108-110	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-
123-125	-	-	-	-	-	-	-	-
126-128	-	1	-	-	-	-	3	-
No. of Samples								
No. of Fish Measured	440	1759	338	414	1108	1764	335	257
Mean Wt. of Fish (Kg.)	2.74	2.41	2.11	2.21	2.03	1.90	2.39	2.34
Wt. of Landings Sampled	130	323	92	97	158	365	10	20
Wt. of Total Landings	153	1854	573	294	624	1740	639	638
Est.No. in Total Landings [1]	0.056	0.769	0.272	0.133	0.307	0.916	0.267	0.273
Range of Depths (Fms.)	54-99	48-85	20-32	75-85	60-165	85-120	100-105	22-29

1) in Millions

TABLE 12 CANADA (Newfoundland) - 1955 LENGTH FREQUENCIES - COD by A.M. Fleming

Commercial Samples

Subdivision	Trawl Fishery (Lines) Inshore			Cod T...	Longline Inshore	Handline
Month or Quarter	...-June	July-Sept.	Oct.-Dec.	Sept.		
3 cm. group	FREQUENCIES in °/oo					
36-38	-	-				
39-41	1	1	4	7	-	
42-44	7	17	10	28	-	
45-47	28	51	33	66	3	
48-50	42	80	41	88	6	
51-53	63	97	81	120	21	
54-56	84	131	98	124	44	
57-59	141	143	96	162	66	175
60-62	147	125	105	165	109	183
63-65	121	99	96	116	106	146
66-68	99	80	94	65	99	93
69-71	60	55	81	33	101	58
72-74	51	29	66	16	80	28
75-77	35	27	46	6	62	16
78-80	19	17	31	4	46	5
81-83	11	12	34	1	46	3
84-86	10	8	15	-	45	2
87-89	6	6	13	-	48	1
90-92	6	6	16	-	36	2
93-95	3	4	11	-	37	-
96-98	3	3	13	-	20	-
99-101	3	1	6	-	14	1
102-104	4	2	3	-	7	-
105-107	1	1	5	-	6	-
108-110	1	-	2	-	2	-
111-113	1	-	-	-	2	-
114-116	1	-	1	-	1	-
117-119	-	-	-	-	1	-
120-122	1	-	-	-	1	-
123-125	-	-	-	-	1	-
126-128	-	-	-	-	1	-
No. of Samples						
No. of Fish Measured	2044	2003	1442	2611	1606	1800
Mean Wt. of Fish (Kg.)	2.32	2.16	2.71	1.80	3.77	2.06
Wt. of Landings Sampled	27	29	18	34	54	13
Wt. of Total Landings [1]						
Est. No. in Total Landings [1]						
Range of Depths (Fms.)	8-20	...	...	...	130-150	8-20

1) In 1955 landings of cod by inshore vessels were not distributed by the different types of gear used in the fishery. In 1956 approximate estimates were made of the quantity taken by cod traps in the various subdivisions as follows: IX, 65%; X, 50%; XI, 10%; XII, XIII, XIV. The remainder was caught by various hook and line gears. In future years these estimates will probably be improved and it may then be possible on the basis of the future data to make reasonable back estimates for the 1955 fishery.

TABLE 13 CANADA (Newfoundland) - 1956 LENGTH FREQUENCIES - COD by A.M.Fleming M.E.Prouse

Commercial Samples

	Otter Trawl Offshore			Trawl Fishery (Lines) Inshore		
Subdivision	3L	3O		3P		
Month or Quarter	Apr.-June	Jan.-Mar.	Oct.-Dec.	Apr.-June	July-Sept.	Oct.-Dec.
3 cm. group	FREQUENCIES in ‰					
36-38	-	-	-	1	-	-
39-41	-	2	-	9	1	3
42-44	2	2	-	24	11	15
45-47	11	6	41	60	35	54
48-50	41	29	37	74	51	71
51-53	71	52	37	73	59	63
54-56	81	67	94	83	79	66
57-59	87	100	85	108	106	86
60-62	126	122	61	109	89	109
63-65	134	160	81	134	118	136
66-68	135	165	69	112	102	88
69-71	110	112	98	86	86	85
72-74	69	74	130	48	90	68
75-77	53	57	49	27	62	38
78-80	22	29	98	18	38	37
81-83	18	9	53	7	23	29
84-86	13	3	20	6	15	9
87-89	7	4	37	5	6	14
90-92	7	1	4	6	9	7
93-95	3	2	-	4	6	6
96-98	4	-	8	4	7	6
99-101	1	1	-	-	3	2
102-104	1	-	-	1	1	3
105-107	1	1	-	1	1	1
108-110	-	-	-	1	1	2
111-113	1	-	-	1	1	1
114-116	1	-	-	-	1	1
117-119	1	-	-	1	1	1
120-122	1	-	-	-	1	-
123-125	-	-	-	-	1	-
126-128	-	-	-	-	-	-
No. of Samples	22	4	2	6	9	5
No. of Fish Measured	3402	754	246	1500	1882	1165
Mean Wt. of Fish (Kg.)	2.47	2.49	3.00	2.57	2.70	2.60
Wt. of Landings Sampled	1012	159	73	19	25	20
Wt. of Total Landings	2054	597	687	1)	1)	1)
Est.No. in Total Landings 2)	0.832	0.240	0.229	1)	1)	1)
Range of Depths (Fms.)	40-100	55-95	50-68	22-60	10-60	15-45

(Cont'd.)

1) The statistical data on the landings by the inshore fishery are not separated by kinds of gear. It was estimated that the following percentages were taken by cod trap: 3K, 65%; 3L, 60%; 3P, 10%; 4R, 30%.

2) In millions

TABLE 13 CANADA (Newfoundland) - 1956 LENGTH FREQUENCIES - COD by A.M.Fleming
(cont'd) M.E.Prouse

Commercial Samples

	Cod Trap Inshore		Handline Inshore		Longline Inshore	
Subdivision	3L		3L		3L	
Month or Quarter	Apr.-June	July-Sept.	Apr.-June	July-Sept.	Apr.-June	July-Sept.
3 cm. group	FREQUENCIES in °/oo					
36-38	2	-	-	-	-	-
39-41	13	7	-	-	-	-
42-44	28	22	22	10	7	-
45-47	54	42	53	30	18	3
48-50	70	72	155	68	28	9
51-53	96	90	169	101	36	27
54-56	125	123	195	154	68	63
57-59	143	140	132	171	120	105
60-62	150	148	115	154	141	131
63-65	131	126	68	114	105	132
66-68	86	94	53	82	105	130
69-71	52	60	20	55	84	91
72-74	26	39	11	27	73	74
75-77	14	17	2	12	29	40
78-80	3	10	-	7	26	21
81-83	4	5	5	4	28	24
84-86	2	2	-	3	21	27
87-89	-	-	-	2	18	27
90-92	-	-	-	2	15	26
93-95	1	-	-	-	18	19
96-98	-	-	-	1	14	15
99-101	-	-	-	1	19	10
102-104	-	-	-	-	6	9
105-107	-	-	-	-	6	3
108-110	-	-	-	-	8	4
111-113	-	-	-	-	1	3
114-116	-	-	-	-	2	3
117-119	-	-	-	-	2	2
120-122	-	-	-	-	-	-
123-125	-	-	-	-	1	-
126-128	-	-	-	-	1	-
No. of Samples	6	24	2	12	4	9
No. of Fish Measured	1611	7182	400	2400	900	1800
Mean Wt. of Fish (Kg.)	1.92	2.02	1.66	2.00	3.16	3.25
Wt. of Landings Sampled	15	67	3	25	19	66
Wt. of Total Landings	1)	1)	1)	1)	1)	1)
Est. No. in Total Landings 2)	1)	1)	1)	1)	1)	1)
Range of Depths (Fms.)	8.5-18.5	8.5-16	6-9	4-16	138-140	125-150

1) The statistical data on the landings by the inshore fishery are not separated by kinds of gear. It was estimated that the following percentages were taken by cod trap: 3K, 65%; 3L, 60%; 3P, 10%; 4R, 30%.

2) In millions

TABLE 14 CANADA (Newfoundland) - 1955 LENGTH FREQUENCIES - HADDOCK by A.M.Fleming M.E.Prouse

OTTER TRAWLERS (Offshore) - Commercial Samples

Subdivision	3N	3O		3P			
Month or Quarter	Oct.-Dec.	Jan.-Mar.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.
2 cm. group	FREQUENCIES in °/oo						
18-19	-	-	-	-	-	-	-
20-21	-	-	-	-	-	-	-
22-23	-	1	-	-	-	-	-
24-25	-	-	-	-	-	-	-
26-27	-	-	-	-	-	-	-
28-29	11	1	-	-	-	-	-
30-31	35	12	-	2	-	-	-
32-33	51	15	2	2	-	-	-
34-35	103	12	25	1	1	-	-
36-37	85	54	23	14	12	4	3
38-39	77	199	105	82	94	48	37
40-41	139	303	271	223	250	200	173
42-43	224	213	311	260	264	287	291
44-45	158	100	167	185	179	230	238
46-47	86	33	50	114	103	134	142
48-49	26	15	28	54	50	57	68
50-51	2	13	10	26	23	24	28
52-53	2	11	3	12	8	7	13
54-55	-	8	4	6	3	3	4
56-57	2	5	-	6	2	2	2
58-59	-	2	-	4	1	1	1
60-61	2	2	-	2	3	-	1
62-63	-	1	-	2	1	-	-
64-65	-	-	-	2	3	1	-
66-67	-	-	-	1	1	-	-
68-69	-	-	-	-	-	-	-
70-71	-	-	-	-	1	1	-
72-73	-	-	-	1	1	-	-
74-75	-	-	-	-	-	-	-
76-77	-	-	-	-	-	-	-
No. of Samples	?	?	?	?	?	?	?
No. of Fish Measured	658	4514	952	13292	9291	8654	9129
Mean Wt. of Fish(Kg.)	0.66	0.62	0.74	0.74	0.69	0.77	0.82
Wt. of Landings Sampled	126	859	85	2427	1108	1137	1649
Wt. of Total Landings	257	1599	176	7422	5413	6588	6978
Est.No. in Total Landings[1]	0.39	2.58	0.24	10.03	7.84	8.56	8.51
Range of Depths (Fms.)	25-27	54-85	36-37	30-120	75-105	20-27	23-31

1) in millions

TABLE 15 CANADA (Newfoundland) - 1956 LENGTH FREQUENCIES - HADDOCK

by A.M. Fleming
M.E. Prouse

OTTER TRAWLERS (Offshore) - Commercial Samples

Subdivision	3N		3O			3P		
Month or Quarter	July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.
2 cm. group	FREQUENCIES in °/₀₀							
18-19	-	-	-	2	-	-	-	-
20-21	-	4	-	1	-	-	-	-
22-23	13	31	-	-	1	-	-	-
24-25	6	20	-	-	1	-	-	-
26-27	6	6	-	-	-	-	-	-
28-29	29	6	1	5	-	-	-	-
30-31	97	38	2	16	-	-	-	-
32-33	148	74	8	25	2	1	-	-
34-35	146	118	31	45	19	1	-	1
36-37	152	170	56	77	51	3	1	1
38-39	140	161	86	96	84	23	16	3
40-41	55	93	193	162	164	122	114	30
42-43	55	89	276	224	237	258	269	143
44-45	52	65	193	180	226	241	252	261
46-47	62	58	90	95	128	168	173	247
48-49	22	36	33	36	52	97	92	155
50-51	10	18	13	17	16	47	43	77
52-53	6	5	6	9	7	20	22	40
54-55	-	4	4	5	5	9	10	15
56-57	-	1	2	1	2	6	4	5
58-59	-	1	3	2	1	3	2	4
60-61	-	1	2	1	1	1	1	5
62-63	-	1	1	-	1	1	1	5
64-65	-	-	-	-	-	1	1	3
66-67	-	-	-	-	-	-	-	1
68-69	-	-	-	-	-	-	-	3
70-71	-	-	-	-	-	-	-	4
72-73	-	-	-	-	-	-	-	-
74-75	-	-	-	-	-	-	-	-
76-77	-	-	-	-	-	-	-	-
No. of Samples	1	7	37	20	18	41	17	7
No. of Fish Measured	309	1814	9834	5652	4084	11550	4071	2012
Mean Wt. of Fish (Kg.)	0.45	0.57	0.70	0.69	0.76	0.84	0.87	1.09
Wt. of Landings Sampled	45	402	2912	1301	807	2735	888	489
Wt. of Total Landings	71	1412	6798	4816	3897	10879	4294	1860
Est.No. in Total Landings[1]	0.16	2.48	9.71	6.98	5.13	12.95	4.94	1.71
Range of Depths (Fms.)	28	25-40	55-105	45-55	50-70	30-130	85-115	100-106

1) In Millions

TABLE 16 DENMARK - 1956 LENGTH FREQUENCIES - COD [2] by Paul Hansen

Offshore

Subdivision	1B							1C						
Month	July			Aug. [1]				July			Aug. [1]			
Gear*	Jig			Jig & L.L.				Jig			Jig & L.L.			
Sex	♂♂	♀♀	Tot.	♂♂	♀♀	??	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	??	Tot.
3 cm. group	FREQUENCIES in °/oo													
30-32	25	42	67	-	-	-	-	-	-	-	-	-	-	-
33-35	25	67	92	-	-	-	-	-	-	-	-	-	-	-
36-38	-	42	42	-	-	-	-	-	-	-	-	-	-	-
39-41	17	33	50	2	-	-	2	-	-	-	-	-	-	-
42-44	17	-	17	-	7	-	7	-	-	-	-	-	-	-
45-47	8	-	8	2	-	-	2	3	5	8	-	-	-	-
48-50	8	-	8	7	-	-	7	-	5	5	-	-	-	-
51-53	-	33	33	-	-	-	-	-	-	-	5	-	-	5
54-56	8	17	25	14	23	2	39	3	-	3	25	10	-	35
57-59	25	50	75	9	16	-	25	12	-	12	5	-	-	5
60-62	50	17	67	47	32	-	79	13	7	20	15	30	-	45
63-65	17	75	92	50	43	2	95	29	35	64	25	30	5	60
66-68	50	58	108	68	72	5	145	71	42	113	60	50	5	115
69-71	33	50	83	70	77	5	152	99	47	146	75	65	-	140
72-74	25	58	83	72	65	2	139	91	106	197	100	105	5	210
75-77	25	25	50	47	52	-	99	106	74	180	65	85	-	150
78-80	33	17	50	50	52	5	107	56	76	132	45	45	-	90
81-83	25	-	25	9	41	5	55	25	39	64	25	10	-	35
84-86	25	-	25	11	18	-	29	15	12	27	25	35	-	60
87-89	-	-	-	5	5	-	10	8	2	10	20	15	-	35
90-92	-	-	-	5	5	-	10	3	3	6	-	10	-	10
93-95	-	-	-	-	-	-	-	-	5	5	-	-	-	-
96-98	-	-	-	-	2	-	2	-	3	3	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	-	-	5	-	5
111-113	-	-	-	-	-	-	-	3	-	3	-	-	-	-
Total °/oo	416	584	1000	468	510	26	1004	537	461	998	490	495	15	1000
Serial No.			IV				I			V				II
No. Fish	25	35	60	207	225	11	443	160	137	297	98	99	3	200
Mean Wt. Kg.				3.39	3.55	3.85	3.48				3.54	3.64	2.77	3.58
Depth	37-45m.			30-70m.				60m.			75-100m.			

1) Age Length Keys based on these samples are given in Tables 19 and 20. (Cont'd.)

2) Measurements of "Total" length.

* L.L. = Longline

TABLE 16 DENMARK - 1956 (cont'd) LENGTH FREQUENCIES - COD[2] by Paul Hansen

Offshore

Subdivision	1D															
Month	May			June			July			July			Aug.[1]			
Gear*	L.L.			L.L.			Jig			Jig			Jig.			
Sex	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	??	Tot
3 cm. group	FREQUENCIES in °/oo															
36-38	-	-	-	3	-	3	-	-	-	-	-	-	8	4	-	12
39-41	10	-	10	3	-	3	-	-	-	-	-	-	4	-	-	4
42-44	-	5	5	-	-	-	-	-	-	-	-	-	8	8	-	16
45-47	-	5	5	-	6	6	-	-	-	-	-	-	4	4	-	8
48-50	-	-	-	-	-	-	-	-	-	4	-	4	8	4	-	12
51-53	10	20	30	-	6	6	-	-	-	4	4	8	8	4	-	12
54-56	10	15	25	-	6	6	-	-	-	18	32	50	29	12	-	41
57-59	10	15	25	6	-	6	14	-	14	24	24	48	8	12	4	24
60-62	44	74	118	3	12	15	36	18	54	42	14	56	17	37		54
63-65	44	74	118	12	3	15	27	41	68	66	35	101	42	33	-	75
66-68	20	88	108	26	79	105	36	27	63	95	42	137	87	62	4	153
69-71	29	59	88	50	82	132	166	82	248	150	95	245	66	37	-	103
72-74	-	98	98	82	106	188	82	86	168	77	80	157	91	66	-	157
75-77	10	69	79	53	114	167	59	112	171	74	32	106	50	58	4	112
78-80	39	54	93	32	94	126	45	72	117	18	21	39	54	46	8	108
81-83	-	69	69	24	65	89	14	41	55	10	14	24	21	29	-	50
84-86	-	59	59	47	34	81	5	-	5	7	7	14	8	17	-	25
87-89	-	39	39	6	15	21	5	9	14	7	-	7	-	21	-	21
90-92	10	5	15	-	15	15	-	18	18	7	-	7	4	-	-	4
93-95	-	15	15	6	6	12	-	-	-	-	-	-	-	-	-	-
96-98	-	5	5	-	3	3	-	9	9	-	-	-	4	-	-	4
99-101	-	-	-	-	3	3	-	-	-	-	-	-	-	-	-	-
Total °/oo	236	768	1004	353	649	1002	489	515	1004	603	400	1003	521	454	20	995
Serial No.			VII			VIII			IX			VI				III
No. Fish	24	78	102	60	110	170	54	57	111	86	57	143	126	110	5	241
Mean Wt Kg.													3.41	3.63	3.60	3.51
Depth	Ca. 120m.			240-280m.			50m.			45m.			45m.			

1) Age Length Keys based on these samples are given in Table 21.
2) Measurements of "Total" length.
* L.L. = Longline

TABLE 17 DENMARK - 1956

AGE FREQUENCIES - COD [2]

and mean length at each age

by Paul Hansen

Offshore

Subdivision		1B			1C			1C		
Month		Aug. [1]			July			Aug. [1]		
Gear		Jig and Longline			Jig			Jig and Longline		
Year-Class	Age Gr.	‰	Length cm. ♂♂	♀♀	‰	Length cm. ♂♂	♀♀	‰	Length cm. ♂♂	♀♀
1952	IV	14	47.0	43.5	3	46.5	-	-	-	-
1951	V	54	57.6	56.6	10	57.0	57.5	35	54.7	56.0
1950	VI	265	63.4	65.1	145	64.3	64.6	110	64.1	65.4
1949	VII	50	69.6	70.1	44	68.0	71.8	50	71.5	67.5
1948	VIII	79	69.8	71.2	74	70.3	72.0	35	72.3	69.5
1947	IX	398	72.9	75.2	599	73.9	75.7	520	71.8	72.6
1946	X	9	75.5	76.5	27	79.3	78.0	20	76.5	76.8
1945	XI	61	77.9	80.1	61	77.8	79.8	120	80.0	79.7
1944	XII	16	75.8	84.0	3	-	81.5	15	75.5	74.5
1943	XIII	11	78.5	78.8	7	84.5	80.5	10	84.5	77.5
1942	XIV	36	81.2	83.1	20	85.8	93.5	45	83.0	85.5
1941	XV	-	-	-	-	-	-	15	81.5	84.0
1940	XVI	-	-	-	3	111.5	-	15	83.5	86.0
1939	XVII	5	83.5	82.5	-	-	-	-	-	-
1936	XX	-	-	-	3	-	97.5	5	-	90.5
1934	XXII	2	91.5	-	-	-	-	5	-	103.5
Serial No.		I			V			II		
No. Fish		443			297			200		
Mean Weight		3.48						3.58		

Subdivision		1D											
Month		May			June			July			July			Aug. [1]		
Gear		Longline			Longline			Jig			Jig			Jig		
Year-Class	Age Gr.	‰	Length cm. ♂♂	♀♀	‰	Length cm. ♂♂	♀♀	‰	Length cm. ♂♂	♀♀	‰	Length cm. ♂♂	♀♀	‰	Length cm. ♂♂	♀♀
1952	IV	20	40.5	44.5	-	-	-	-	-	-	-	-	-	34	47.7	44.5
1951	V	49	54.5	54.8	6	-	45.5	-	-	-	63	53.5	55.5	72	57.0	57.8
1950	VI	294	61.3	63.6	41	61.0	60.5	108	60.7	63.5	273	63.4	64.8	203	64.0	64.7
1949	VII	20	77.5	72.5	6	71.5	71.5	126	68.7	69.0	77	69.8	69.5	93	71.1	71.1
1948	VIII	39	68.0	66.0	24	70.5	67.5	18	-	71.5	84	68.9	70.5	72	70.4	73.6
1947	IX	323	70.2	74.9	429	72.5	71.8	454	72.3	75.5	427	72.1	-	432	72.9	76.5
1946	X	10	-	81.5	6	-	73.5	54	70.3	68.0	10	72.5	-	13	78.0	83.5
1945	XI	118	79.5	80.4	112	78.0	77.4	162	77.6	77.0	49	77.8	-	47	77.9	77.5
1944	XII	29	79.5	87.5	18	77.8	77.8	9	-	76.5	-	-	-	8	96.5	69.5
1943	XIII	29	-	76.2	65	78.8	75.4	-	-	-	-	-	-	8	-	88.0
1942	XIV	49	91.5	83.8	224	81.3	81.6	54	77.5	89.5	21	80.2	-	17	83.5	85.0
1941	XV	10	-	86.5	12	-	77.5	9	76.5	-	-	-	-	-	-	-
1940	XVI	-	-	-	41	86.3	87.4	9	80.5	-	-	-	-	-	-	-
1939	XVII	-	-	-	12	84.5	84.5	-	-	-	-	-	-	-	-	-
1936	XX	10	-	93.5	-	-	-	-	-	-	-	-	-	-	-	-
Serial No.		VII			VIII			IX			VI			III		
No. Fish		102			170			111			143			241		
Mean Weight														3.51		

1) Age Length Keys based on these samples are given in Tables 19, 20, and 21.

2) Measurements made of "Total" length

TABLE 18 DENMARK - 1956 AGE FREQUENCIES - COD by Paul Hansen

Inshore

Subdivision		1A	1B		1D						1E	
Month		Aug.-Oct.	Aug.-Sept.	Sept.	Feb.	Apr.	June	June	Oct.	Dec.	June	Oct.
Gear*		H&L	H&L	H&L	OT	Jig	PN	PN	H&L	H&L	H&L	H&L
Year-Class	Age-Gr.	FREQUENCIES in °/oo										
1952	IV	-	-	20	149	-	168	224	10	79	40	26
1951	V	7	-	60	266	9	269	105	10	50	40	42
1950	VI	14	5	350	223	73	269	263	90	129	219	222
1949	VII	-	-	50	85	45	67	114	40	109	269	132
1948	VIII	7	5	30	21	45	-	18	30	69	65	26
1947	IX	107	123	240	85	200	92	140	260	129	259	270
1946	X	-	27	20	16	27	-	9	-	-	15	11
1945	XI	129	59	50	101	182	42	66	70	158	60	127
1944	XII	43	55	40	11	27	-	-	20	29	-	16
1943	XIII	93	55	20	-	18	-	-	-	20	5	16
1942	XIV	421	259	50	37	145	25	35	220	88	15	79
1941	XV	64	55	-	-	-	-	-	-	-	5	-
1940	XVI	43	118	30	5	191	42	13	190	119	5	11
1939	XVII	14	73	-	-	18	-	4	20	10	-	5
1938	XVIII	-	23	-	-	9	8	-	10	-	5	5
1937	XIX	-	14	-	-	-	-	-	-	-	-	-
1936	XX	57	118	20	-	9	17	-	30	10	-	5
1934	XXII	-	14	20	-	-	-	9	-	-	-	5
No. of Fish		141	220	100	188	110	119	228	100	101	201	189
Serial No.		9	10	11	14	13	12	16	15	17	18	19

Subdivision		1F												
Month		Jan.	Feb.	Apr-May	May	June	July	Aug.	Sept.	Sept.	Sept.	Oct.	Oct.	Oct.
Gear*		OT	H&L	H&L	H&L	H&L	H&L	Jig	H&L	H&L	H&L	H&L	OT	H&L
1952	IV	118	-	89	10	69	15	89	20	-	-	70	10	-
1951	V	76	15	49	75	95	40	149	31	45	-	106	40	18
1950	VI	286	103	537	231	336	375	501	128	440	47	362	81	147
1949	VII	227	29	99	296	95	285	149	107	175	53	126	151	112
1948	VIII	59	15	10	35	9	40	13	36	15	47	25	20	24
1947	IX	92	353	158	327	95	175	58	434	210	433	231	434	353
1946	X	17	-	-	-	-	-	5	26	-	27	-	-	47
1945	XI	126	265	39	10	147	55	28	82	75	193	35	222	194
1944	XII	-	44	-	-	43	5	-	20	5	13	-	-	18
1943	XIII	-	-	-	-	34	-	-	15	10	33	10	10	18
1942	XIV	-	103	20	10	60	-	8	61	20	80	20	30	29
1941	XV	-	-	-	-	9	-	-	-	-	20	-	-	18
1940	XVI	-	44	-	5	9	-	-	20	5	33	15	-	18
1939	XVII	-	15	-	-	-	-	-	10	-	13	-	-	-
1938	XVIII	-	15	-	-	-	5	-	-	-	-	-	-	6
1936	XX	-	-	-	-	-	5	-	10	-	-	-	-	-
1934	XXII	-	-	-	-	-	-	-	-	-	7	-	-	-
No. of Fish		119	68	213	199	116	200	395	196	200	150	199	99	170
Serial No.		29	20	23	28	22	26	31	21	24	25	27	30	32

* H&L = Cod Hook and Long Line PN = Pound Net OT = Otter Trawl

TABLE 19 DENMARK - 1956 COD AGE LENGTH KEY [1] by Paul Hansen

1B August Offshore Taken by Jig and Longline Serial No.I

♂♂

Age	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XVII	Total
3 cm. Group	ACTUAL NUMBERS												
39-41	1	–	–	–	–	–	–	–	–	–	–	–	1
45-47	1	–	–	–	–	–	–	–	–	–	–	–	1
48-50	2	1	–	–	–	–	–	–	–	–	–	–	3
54-56	–	3	2	–	–	1	–	–	–	–	–	–	6
57-59	–	1	3	–	–	–	–	–	–	–	–	–	4
60-62	–	3	17	1	–	–	–	–	–	–	–	–	21
63-65	–	1	15	2	–	4	–	–	–	–	–	–	22
66-68	–	–	11	2	5	11	–	1	–	–	–	–	30
69-71	–	–	3	–	6	22	–	–	–	–	–	–	31
72-74	–	–	1	1	4	19	2	3	2	–	–	–	32
75-77	–	–	–	–	–	18	–	1	1	–	1	–	21
78-80	–	–	–	2	–	12	1	3	1	1	2	–	22
81-83	–	–	–	–	–	2	–	–	–	–	2	–	4
84-86	–	–	–	–	–	1	–	2	–	–	1	1	5
87-89	–	–	–	–	–	2	–	–	–	–	–	–	2
90-92	–	–	–	–	–	–	–	1	–	–	–	1	2
	4	9	52	8	15	92	3	11	4	1	6	2	207

♀♀

Age	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	Total
3 cm. Group	ACTUAL NUMBERS											
42-44	2	1	–	–	–	–	–	–	–	–	–	3
54-56	–	7	2	–	–	1	–	–	–	–	–	10
57-59	–	5	2	–	–	–	–	–	–	–	–	7
60-62	–	1	13	–	–	–	–	–	–	–	–	14
63-65	–	1	16	–	2	–	–	–	–	–	–	19
66-68	–	–	20	5	3	4	–	–	–	–	–	32
69-71	–	–	6	4	8	15	–	1	–	–	–	34
72-74	–	–	5	2	2	19	–	1	–	–	–	29
75-77	–	–	–	–	3	17	1	1	–	1	–	23
78-80	–	–	–	1	1	12	–	5	–	1	3	23
81-83	–	–	–	–	1	8	–	4	1	1	3	18
84-86	–	–	–	–	–	2	–	4	1	–	1	2
87-89	–	–	–	–	–	2	–	–	–	–	–	2
90-92	–	–	–	–	–	1	–	–	–	–	1	2
96-98	–	–	–	–	–	–	–	–	–	–	1	1
	2	15	64	12	20	81	1	16	2	3	9	225

Unsexed

Age	V	VI	VII	IX	XII	XIII	XIV	XVII	Total
3 cm. Group	ACTUAL NUMBERS								
54-56	1	–	–	–	–	–	–	–	1
63-65	–	1	–	–	–	–	–	–	1
66-68	–	–	–	2	–	–	–	–	2
69-71	–	–	2	–	–	–	–	–	2
72-74	–	–	–	1	–	–	–	–	1
78-80	–	–	–	–	1	–	1	–	2
81-83	–	–	–	–	–	1	–	1	2
	1	1	2	3	1	1	1	1	11

1) Measurements made of "Total" length.

TABLE 20 DENMARK - 1956 COD AGE LENGTH KEY [1] by Paul Hansen

10 August Offshore Taken by Jig and Longline Serial No.II

♂♂

Age	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total
3 cm. Group	ACTUAL NUMBERS												
51-53	1	-	-	-	-	-	-	-	-	-	-	-	1
54-56	3	1	-	-	1	-	-	-	-	-	-	-	5
57-59	1	-	-	-	-	-	-	-	-	-	-	-	1
60-62	-	2	-	-	1	-	-	-	-	-	-	-	3
63-65	-	3	-	-	2	-	-	-	-	-	-	-	5
66-68	-	3	-	2	7	-	-	-	-	-	-	-	12
69-71	-	-	1	-	14	-	-	-	-	-	-	-	15
72-74	-	1	1	2	12	-	3	-	-	1	-	-	20
75-77	-	-	-	1	8	1	2	1	-	-	-	-	13
78-80	-	-	-	1	6	-	2	-	-	-	-	-	9
81-83	-	-	-	-	1	-	3	-	-	-	1	-	5
84-86	-	-	-	-	-	-	2	-	1	1	-	1	5
87-89	-	-	-	-	-	-	2	-	-	2	-	-	4
	5	10	2	6	52	1	14	1	1	4	1	1	98

♀♀

Age	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XX	XXII	Total
3 cm. Group	ACTUAL NUMBERS														
54-56	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2
60-62	-	3	1	-	2	-	-	-	-	-	-	-	-	-	6
63-65	-	2	1	-	3	-	-	-	-	-	-	-	-	-	6
66-68	-	5	3	-	2	-	-	-	-	-	-	-	-	-	10
69-71	-	1	3	1	8	-	-	-	-	-	-	-	-	-	13
72-74	-	-	-	-	17	1	2	1	-	-	-	-	-	-	21
75-77	-	-	-	-	12	1	3	1	-	-	-	-	-	-	17
78-80	-	-	-	-	6	1	-	-	1	1	-	-	-	-	9
81-83	-	-	-	-	-	-	1	-	-	-	1	-	-	-	2
84-86	-	-	-	-	-	-	4	-	-	1	1	1	-	-	7
87-89	-	-	-	-	-	-	-	-	-	2	-	1	-	-	3
90-92	-	-	-	-	-	-	-	-	-	1	-	-	1	-	2
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	2	11	8	1	50	3	10	2	1	5	2	2	1	1	99

Unsexed

Age	VI	IX	Total
3 cm. Group	Actual Numbers		
63-65	1	-	1
66-68	-	1	1
72-74	-	1	1
	1	2	3

1) Measurements made of "Total" length.

TABLE 21 DENMARK - 1956 COD AGE LENGTH KEY [1] by Paul Hansen

10 August Offshore Taken by Jig Serial No.III

♂♂

Age	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Total
3 cm. Group					ACTUAL NUMBERS						
36-38	2	-	-	-	-	-	-	-	-	-	2
39-41	1	-	-	-	-	-	-	-	-	-	1
42-44	-	2	-	-	-	-	-	-	-	-	2
45-47	-	1	-	-	-	-	-	-	-	-	1
48-50	-	1	1	-	-	-	-	-	-	-	2
51-53	-	2	-	-	-	-	-	-	-	-	2
54-56	-	-	3	3	-	-	1	-	-	-	7
57-59	-	-	2	-	-	-	-	-	-	-	2
60-62	-	-	2	2	-	-	-	-	-	-	4
63-65	-	-	-	6	1	-	3	-	-	-	10
66-68	-	-	-	9	1	4	7	-	-	-	21
69-71	-	-	-	1	2	2	11	-	-	-	16
72-74	-	-	-	-	3	-	16	-	3	-	22
75-77	-	-	-	-	2	1	7	-	2	-	12
78-80	-	-	-	-	-	1	9	1	2	-	13
81-83	-	-	-	-	-	-	3	-	2	-	5
84-86	-	-	-	-	-	-	1	-	1	-	2
90-92	-	-	-	-	-	-	-	-	1	-	1
96-98	-	-	-	-	-	-	-	-	-	1	1
	3	6	8	21	9	8	58	1	11	1	126

♀♀

Age	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	Total
3 cm. Group						ACTUAL NUMBERS							
36-38	1	-	-	-	-	-	-	-	-	-	-	-	1
42-44	1	1	-	-	-	-	-	-	-	-	-	-	2
45-47	-	1	-	-	-	-	-	-	-	-	-	-	1
48-50	-	-	1	-	-	-	-	-	-	-	-	-	1
51-53	-	-	-	1	-	-	-	-	-	-	-	-	1
54-56	-	-	2	1	-	-	-	-	-	-	-	-	3
57-59	-	-	2	-	-	-	1	-	-	-	-	-	3
60-62	-	-	2	5	1	-	1	-	-	-	-	-	9
63-65	-	-	1	6	1	-	-	-	-	-	-	-	8
66-68	-	-	-	10	2	-	2	-	1	-	-	-	15
69-71	-	-	-	3	1	2	2	-	-	1	-	-	9
72-74	-	-	-	1	5	4	6	-	-	-	-	-	16
75-77	-	-	-	-	1	2	10	-	1	-	-	-	14
78-80	-	-	-	-	1	1	9	-	-	-	-	-	11
81-83	-	-	-	-	-	-	6	-	-	-	-	1	7
84-86	-	-	-	-	-	-	3	1	-	-	-	-	4
87-89	-	-	-	-	-	-	1	-	2	-	1	1	5
	2	2	8	27	12	9	41	1	4	1	1	2	110

Unsexed				
Age	V	VII	IX	Total
3 cm. Group	Actual Numbers			
57-59	1	-	-	1
66-68	-	1	-	1
75-77	-	-	1	1
78-80	-	-	2	2
	1	1	3	5

1) Measurements made of "Total" length.

TABLE 22 DENMARK - 1952-56 LENGTH FREQUENCIES - REDFISH [1] by Paul Hansen

SHRIMP TRAWL (Inshore) : Research Samples Subarea 1 Sebastes marinus marinus

Taken by M/C Adolf Jensen in Godthaab Fjord, 68°25'N. 50°19'W.

Location	Godthaab Fjord																	
Year	1952		1953					1954						195				
Month	May	July	June	Aug.	Oct.	Dec.	Feb.	Mar.	Apr.	May	June	July	Dec.	May	July	Aug.	Sept.	Nov.
1 cm. group	FREQUENCIES in °/oo																	
5	1	–	–	–	–	–	–	3	–	–	–	6	–	–	–	–	–	–
6	1	–	–	–	–	–	–	15	1	–	13	–	–	–	–	–	–	–
7	1	8	5	8	3	2	–	6	17	5	66	35	8	3	11	8	2	–
8	4	8	8	7	15	18	5	21	24	10	92	82	45	10	–	8	6	5
9	11	19	17	5	19	31	52	94	104	41	53	19	69	54	33	19	9	6
10	33	34	44	18	30	46	80	184	212	112	158	41	44	101	108	80	33	21
11	42	76	15	39	39	78	60	88	110	106	158	85	54	60	144	132	56	55
12	80	57	11	12	30	80	110	72	62	50	112	53	111	58	79	104	143	71
13	93	103	37	28	32	39	92	124	88	56	72	50	71	93	47	55	49	36
14	53	84	59	43	58	41	44	60	32	96	66	38	52	114	79	87	47	52
15	28	31	66	64	53	65	43	24	27	36	39	13	95	44	90	72	97	73
16	24	15	99	92	75	72	79	36	37	36	13	19	83	54	40	74	106	68
17	10	8	94	112	103	91	67	48	55	36	7	50	43	61	54	50	69	46
18	23	46	62	112	85	44	88	36	68	61	13	63	46	28	65	53	61	65
19	39	34	28	51	57	67	71	45	45	56	13	40	45	28	40	27	60	77
20	33	34	32	54	32	54	40	42	27	66	–	50	45	32	22	24	38	50
21	11	27	20	26	37	25	17	9	8	10	26	28	40	36	32	31	35	35
22	33	46	29	57	42	26	14	6	7	10	–	22	38	50	25	32	35	36
23	56	57	32	42	38	39	10	6	7	36	7	22	27	46	29	26	30	48
24	39	57	21	27	28	25	11	12	1	25	7	28	18	24	36	27	34	53
25	47	38	26	30	25	23	12	6	1	5	7	6	14	22	18	14	17	57
26	42	34	32	46	33	28	7	6	7	15	7	13	18	13	15	8	10	22
27	31	34	39	47	44	28	12	–	4	30	20	16	8	8	4	11	6	19
28	39	19	20	24	25	23	11	3	6	36	7	19	6	10	4	6	6	14
29	49	8	16	8	10	3	9	12	4	15	7	13	4	8	4	–	3	12
30	68	46	13	8	12	8	10	6	8	–	–	31	4	5	7	3	7	10
31	53	11	8	9	11	8	7	3	8	10	13	19	1	5	–	6	2	5
32	26	8	17	3	8	5	10	–	8	5	7	28	1	7	–	2	2	7
33	12	–	21	5	14	7	10	–	7	–	–	3	1	6	4	3	4	4
34	3	4	14	4	2	5	8	3	4	5	–	6	–	3	–	8	5	8
35	1	4	9	1	9	–	5	3	3	–	–	19	–	3	–	5	5	7
36	1	4	15	3	6	5	4	–	–	5	–	–	–	3	–	3	1	5
37	–	–	15	3	6	2	2	3	1	10	–	19	1	3	–	5	6	4
38	5	8	18	–	3	2	4	6	–	–	7	16	–	–	4	3	5	10
39	1	–	11	1	8	2	2	–	1	–	–	9	1	2	–	3	2	5
40	1	4	13	4	2	–	2	6	1	5	7	16	1	1	–	5	2	3
>40	4	34	35	5	5	10	5	9	–	10	7	22	5	5	7	3	6	10
No. of Hauls	1	2	1	1	1	1	1	1	1	1	2	2	1	1	1	2	1	1	1
No. of Fish	738	265	1329	738	929	612	2596	331	708	197	152	318	845	1074	277	622	1226	806

1) Total length recorded to the cm. below.

(Cont'd.)

TABLE 22 DENMARK - 1952-56 (cont'd) LENGTH FREQUENCIES - REDFISH [1] by Paul Hansen

SHRIMP TRAWL (Inshore) : Research Samples Subarea 1 Sebastes marinus marinus

Taken by M/C Adolf Jensen in Godthaab Fjord, 68°25'N, 50°19'W, and by M/C Emmanuel in Tunugdliarfik Fjord, 60°56'N, 45°47'W.

Location	Godthaab Fjord					Tunugdliarfik Fjord									
Year	1956					1955		1956							
Month	Feb.	May	July	Oct.	Dec.	Sept.	Oct.	Feb.	Apr.	May	June	July	Aug.	Sept.	Oct.
1 cm. groun	FREQUENCIES in °/oo														
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	1	1	-	-	-	31	5	28	11	4	-	7	4
7	1	2	3	5	5	-	-	48	8	28	94	12	11	7	22
8	8	4	-	3	54	5	-	40	16	83	111	16	38	41	67
9	33	12	9	1	64	15	13	111	19	56	78	49	38	47	104
10	34	18	16	5	22	66	16	68	48	125	61	81	80	68	67
11	64	50	27	18	32	87	83	34	35	83	72	87	115	95	118
12	121	141	50	42	51	92	153	97	37	56	56	103	65	74	74
13	80	157	123	80	75	61	161	140	72	181	89	134	54	41	104
14	60	104	166	75	101	10	83	68	80	83	83	106	77	47	111
15	71	70	87	78	101	26	70	57	69	42	28	65	73	81	74
16	52	97	63	42	42	10	76	60	53	28	17	34	50	27	52
17	50	73	80	77	75	-	48	40	67	14	33	20	23	14	22
18	38	36	62	75	45	15	29	20	61	-	-	20	19	47	18
19	34	36	64	51	39	5	10	9	37	28	17	10	8	7	30
20	34	38	64	67	23	20	19	23	37	14	6	9	4	14	7
21	18	28	36	44	20	10	13	11	51	-	-	9	19	7	7
22	28	12	50	42	18	10	10	9	40	-	-	9	11	14	4
23	25	16	29	49	22	10	25	11	29	-	11	6	4	-	4
24	34	10	13	41	28	15	13	11	19	14	-	2	4	7	15
25	29	12	12	44	47	5	10	9	13	28	-	9	11	20	11
26	20	12	12	38	59	31	16	3	19	-	6	7	19	-	4
27	19	2	10	33	36	41	6	9	11	-	6	13	11	14	4
28	22	2	3	20	20	71	13	9	19	-	6	16	11	20	11
29	13	2	-	10	6	51	13	9	5	28	11	22	46	14	15
30	13	2	-	8	6	56	22	17	13	14	44	25	27	68	15
31	7	2	-	-	6	31	19	6	16	14	39	27	27	88	11
32	13	3	-	5	-	61	10	11	24	14	33	26	42	20	7
33	9	3	1	2	1	92	13	-	32	-	11	21	38	34	7
34	12	3	-	2	1	36	22	11	19	14	33	22	19	14	4
35	13	5	4	7	1	20	6	9	3	14	22	14	31	27	4
36	10	5	5	3	-	36	13	11	5	-	6	12	19	7	4
37	13	4	3	2	-	10	-	3	11	14	6	2	4	14	-
38	8	7	-	3	-	-	3	-	11	-	11	2	-	14	-
39	1	7	-	3	-	-	3	-	5	-	-	1	-	-	-
40	4	8	5	-	-	-	-	-	5	-	-	-	-	-	-
>40	8	14	1	24	-	-	10	6	5	-	-	3	-	7	-
No. of Hauls	1	3	1	1	1	1	1	1	1	1	2	3	1	1	1
No. of Fish	1337	2005	771	613	785	196	314	351	375	72	180	1639	261	148	270

[1] Total length recorded to the cm. below.

TABLE 23 GERMANY - 1956 LENGTH FREQUENCIES - COD [3) 4)] by Arno Meyer

OTTER TRAWLERS - Commercial Landings

Subdivision	1D						1D-F	1F		
Month	May	May	June	June	June-July	Oct.	Nov.	July-Aug.	Aug.	Nov.
3 cm. group	FREQUENCIES in %									
42-44	-	-	-	-	-	10	-	-	-	-
45-47	-	4	-	-	-	27	-	21	-	6
48-50	1	17	-	7	-	51	5	85	-	53
51-53	5	17	1	8	5	43	19	160	21	84
54-56	10	27	13	38	16	43	94	181	90	115
57-59	32	59	42	68	40	51	174	135	198	169
60-62	77	125	109	103	58	82	149	126	187	166
63-65	118	134	157	138	110	112	160	119	137	97
66-68	191	145	180	132	174	127	168	70	130	98
69-71	215	156	173	173	173	108	105	37	102	59
72-74	125	126	146	141	161	103	61	21	61	50
75-77	102	89	81	116	95	106	33	14	37	36
78-80	72	58	57	41	71	85	11	9	15	25
81-83	31	24	20	17	31	28	7	8	9	15
84-86	16	13	7	8	40	6	3	7	2	7
87-89	1	5	5	5	10	7	2	2	4	6
90-92	1	1	3	4	7	6	1	2	3	7
93-95	1	-	2	-	3	2	-	1	1	3
96-98	1	-	1	-	2	1	1	1	1	2
99-101	-	-	-	-	1	2	1	1	1	1
102-104	-	-	-	-	1	-	-	-	-	-
105-107	-	-	-	-	1	-	-	-	-	-
108-110	-	-	-	-	1	-	-	-	-	-
120-122	-	-	-	-	-	-	2	-	-	-
132-134	-	-	-	-	-	-	1	-	-	-
Serial No.	61	64	66	68	74	88	92	78	80	93
No. of Samples	1	1	1	1	1	1	1	1	1	1
No. of Fish Measured	528	724	642	393	541	461	342	444	330	412
Mean Wt. Fish Landed (Kg.) [1)]	2.21	2.15	2.14	2.08	2.48	2.36	2.13	1.50	1.77	1.81
Wt. Landings Sampled (Tons) [1)]	213	285	201	53	155	42	16	127	120	48
Wt. Total Landings (Tons) [1)]	1,788		15,350		20,185	42	155	440		129
Est. No. in Total Landings [2)]	0.820		7.207		8.139	0.018	0.073	0.270		0.071

1) Weights of Gutted Head On Cod
2) In Millions
3) Age/Length Keys are given in Tables 25-33.
4) Measurements made of "Total" length.

TABLE 24 GERMANY - 1956 AGE FREQUENCIES[1] - COD by Arno Meyer

OTTER TRAWLERS - Commercial Landings

Subdivision		1D					1D-F	1F		
Month		May	June	June	June-July	Oct.	Nov.	July-Aug.	Aug.	Nov.
Age	Year-Class	FREQUENCIES in °/oo								
3	1953	-	-	-	-	6	3	-	-	-
4	1952	2	-	-	-	101	34	-	5	14
5	1951	10	17	20	5	108	248	90	11	87
6	1950	168	281	244	210	265	478	593	525	527
7	1949	102	153	124	123	130	165	169	246	155
8	1948	163	55	115	77	55	7	15	26	18
9	1947	433	383	394	413	248	40	90	135	101
10	1946	23	25	12	20	26	2	2	6	2
11	1945	34	58	58	59	60	13	32	37	64
12	1944	5	3	4	16	-	1	2	2	10
13	1943	14	-	2	12	-	-	-	-	4
14	1942	37	22	27	62	1	5	3	1	9
15	1941	-	-	-	-	-	1	-	-	2
16	1940	9	2	-	2	-	-	1	4	2
17	1939	-	-	-	2	-	-	1	-	-
18	1938	-	-	-	-	-	-	-	-	1
19	1937	-	-	-	-	-	-	-	-	1
20	1936	-	-	-	-	-	1	1	1	3
21	1935	-	-	-	-	-	-	-	-	-
22	1934	-	-	-	-	-	-	-	-	-
23	1933	-	-	-	-	-	1	1	-	-
Serial No.		61	66	68	74	88	92	78	80	93
No. Aged		194	221	202	180	163	194	210	316	187
Mean Wt. Kg.		2.21	2.14	2.08	2.48	2.36	2.13	1.50	1.77	1.81
Wt. Landings		213	201	53	155	42	16	127	120	48
Wt. Total Landings		1,788	15,350		20,185	42	155	440		129
Est. No. in Total Landings[2]		0.820	7.207		8.139	0.018	0.073	0.270		0.071

1) Calculated from Length Frequencies and Age Length Keys by Arno Meyer. Fish for which ages were indeterminate ("?") were ignored in the calculations. Age/Length Keys are given in Tables 25-33.

2) In millions

TABLE 25 GERMANY - 1956 COD AGE LENGTH KEY[1] by Arno Meyer

OTTER TRAWLERS 1D May Serial No.61

Year-Class	?	1953	1952	1951	1950	1949	1948	1947	1946	1945		Total
Age	?	3	4	5	6	7	8	9	10	11	>11	
3 cm. Group	ADJUSTED NUMBERS											
30-32	-	1.0	-	-	-	-	-	-	-	-	-	-
33-35	-	-	-	-	-	-	-	-	-	-	-	-
36-38	-	-	-	-	-	-	-	-	-	-	-	-
39-41	-	-	-	-	-	-	-	-	-	-	-	-
42-44	-	-	-	-	-	-	-	-	-	-	-	-
45-47	-	-	-	-	-	-	-	-	-	-	-	-
48-50	-	-	-	0.7	0.7	0.1	-	-	-	-	-	1.5
51-53	-	-	-	4.2	4.2	0.6	-	-	-	-	-	9.0
54-56	-	-	0.3	3.0	7.5	0.6	0.3	-	-	-	-	11.7
57-59	-	-	0.6	1.8	10.8	0.6	0.6	-	-	-	-	14.4
60-62	-	-	0.1	0.3	10.3	2.1	1.6	1.5	-	-	-	15.9
63-65	0.3	-	-	-	8.8	2.5	2.2	3.6	-	-	-	17.4
66-68	1.8	-	-	-	1.8	3.0	4.2	12.6	-	-	-	23.4
69-71	1.2	-	-	-	0.9	1.8	3.3	8.7	0.3	-	-	16.2
72-74	0.6	-	-	-	-	0.6	2.4	4.8	0.6	-	-	9.0
75-77	0.1	-	-	-	-	0.6	0.9	4.8	0.1	1.0	2.5	10.0
78-80	-	-	-	-	-	0.5	0.6	4.6	0.2	1.7	3.2	10.8
81-83	-	-	-	-	-	-	0.6	3.6	1.2	4.2	4.2	13.8
84-86	-	-	-	-	-	-	0.3	3.0	0.6	3.0	6.0	12.9
87-89	-	-	-	-	-	-	-	2.4	-	1.8	7.8	12.0
90-92	-	-	-	-	-	-	-	1.4	-	1.3	5.8	8.5
93-95	-	-	-	-	-	-	-	1.0	-	1.0	4.5	6.5
96-98	-	-	-	-	-	-	-	-	-	1.0	1.0	2.0
99-101	-	-	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	-	2.0	2.0
105-107	-	-	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-	-	-	-	-
Total	4	1	1	10	45	13	17	52	3	15	37	198

1) Commercial landings - measurements made of "Total" length.

TABLE 26 GERMANY - 1956 COD AGE LENGTH KEY [1] by Arno Meyer

OTTER TRAWLERS 1D June Serial No.66

Year-Class	?	1952	1951	1950	1949	1948	1947	1946	1945		Total
Age	?	4	5	6	7	8	9	10	11	>11	
3 cm. Group	ADJUSTED NUMBERS										
30-32	-	-	-	-	-	-	-	-	-	-	-
33-35	-	-	-	-	-	-	-	-	-	-	-
36-38	-	-	-	-	-	-	-	-	-	-	-
39-41	-	-	-	-	-	-	-	-	-	-	-
42-44	-	-	-	-	-	-	-	-	-	-	-
45-47	-	-	-	-	-	-	-	-	-	-	-
48-50	-	1.0	1.4	0.6	-	-	-	-	-	-	3.0
51-53	-	-	2.4	3.6	-	-	-	-	-	-	6.0
54-56	-	-	3.3	8.1	0.3	-	-	-	-	-	11.7
57-59	-	-	4.2	12.6	0.6	-	-	-	-	-	17.4
60-62	-	-	0.7	17.1	3.1	1.5	2.0	-	-	-	24.4
63-65	0.1	-	-	15.7	3.8	1.9	3.1	-	-	-	24.6
66-68	0.6	-	-	4.2	4.8	2.4	6.6	-	-	-	18.6
69-71	0.6	-	-	2.4	3.9	1.2	9.3	0.6	0.3	-	18.3
72-74	0.6	-	-	0.6	3.0	-	12.0	1.2	0.6	-	18.0
75-77	0.6	-	-	0.1	0.5	-	7.5	0.7	2.6	1.0	13.0
78-80	0.6	-	-	-	-	-	6.7	0.6	3.6	1.4	12.9
81-83	0.6	-	-	-	-	-	7.2	0.6	6.6	2.4	17.4
84-86	0.3	-	-	-	-	-	4.2	0.3	4.5	4.8	14.1
87-89	-	-	-	-	-	-	1.2	-	2.4	7.2	10.8
90-92	0.5	-	-	-	-	-	0.2	-	2.4	4.7	7.8
93-95	0.6	-	-	-	-	-	-	-	2.0	3.7	6.3
96-98	0.6	-	-	-	-	-	-	-	-	1.2	1.8
99-101	0.3	-	-	-	-	-	-	-	-	0.6	0.9
102-104	1.0	-	-	-	-	-	-	-	-	-	1.0
105-107	-	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-	-	-	-
Total	7	1	12	65	20	7	60	4	25	27	228

[1] Commercial landings - measurements made of "Total" length.

TABLE 27 GERMANY - 1956 COD AGE LENGTH KEY [1] by Arno Meyer

OTTER TRAWLERS 1D June Serial No.68

Year-Class	?	1951	1950	1949	1948	1947	1946	1945		Total
Age	?	5	6	7	8	9	10	11	>11	
3 cm. Group	ADJUSTED NUMBERS									
30-32	-	-	-	-	-	-	-	-	-	-
33-35	-	-	-	-	-	-	-	-	-	-
36-38	-	-	-	-	-	-	-	-	-	-
39-41	-	-	-	-	-	-	-	-	-	-
42-44	-	-	-	-	-	-	-	-	-	-
45-47	-	-	-	-	-	-	-	-	-	-
48-50	-	2.8	0.5	-	-	-	-	-	-	3.3
51-53	-	4.8	3.0	-	-	-	-	-	-	7.8
54-56	0.3	2.7	7.5	1.2	0.3	-	-	-	-	12.0
57-59	0.6	0.6	12.0	2.4	0.6	-	-	-	-	16.2
60-62	0.1	0.1	13.0	1.4	3.6	1.5	-	-	-	19.7
63-65	0.1	-	11.3	1.5	3.9	3.7	-	-	-	20.5
66-68	0.6	-	1.8	3.0	2.4	13.2	-	-	-	21.0
69-71	0.6	-	0.9	3.9	2.7	11.7	0.3	0.9	0.3	21.3
72-74	0.6	-	-	4.8	3.0	10.2	0.6	1.8	0.6	21.6
75-77	0.6	-	-	0.8	1.0	12.2	0.6	3.3	1.6	20.1
78-80	0.5	-	-	-	0.5	10.9	0.5	3.5	1.7	17.6
81-83	-	-	-	-	-	2.4	-	3.0	1.2	6.6
84-86	0.3	-	-	-	-	1.5	0.3	2.1	2.7	6.9
87-89	0.6	-	-	-	-	0.6	0.6	1.2	4.2	7.2
90-92	0.1	-	-	-	-	0.1	0.1	2.2	2.7	5.2
93-95	-	-	-	-	-	-	-	-	-	-
96-98	-	-	-	-	-	-	-	-	-	-
99-101	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-	-	-
Total	5	11	50	19	18	68	3	18	15	207

1) Commercial landings - measurements made of "Total" length.

TABLE 28 GERMANY - 1956 COD AGE LENGTH KEY [1] by Arno Meyer

OTTER TRAWLERS 1D June/July Serial No.74

Year-Class	?	1951	1950	1949	1948	1947	1946	1945		Total
Age	?	5	6	7	8	9	10	11	>11	
3 cm. Group	ADJUSTED NUMBERS									
30-32	-	-	-	-	-	-	-	-	-	-
33-35	-	-	-	-	-	-	-	-	-	-
36-38	-	-	-	-	-	-	-	-	-	-
39-41	-	-	-	-	-	-	-	-	-	-
42-44	-	-	-	-	-	-	-	-	-	-
45-47	-	-	-	-	-	-	-	-	-	-
48-50	-	-	-	-	-	-	-	-	-	-
51-53	-	1.0	1.5	-	-	-	-	-	-	2.5
54-56	-	1.0	6.6	0.6	-	-	-	-	-	8.2
57-59	-	-	10.2	1.2	-	-	-	-	-	11.4
60-62	-	-	11.2	2.7	-	0.5	-	-	-	14.4
63-65	0.2	-	10.0	2.9	0.4	1.5	-	-	0.1	15.1
66-68	1.2	-	3.0	2.4	2.4	6.0	-	-	0.6	15.6
69-71	0.9	-	1.5	3.0	2.4	11.4	-	0.3	0.9	20.4
72-74	0.6	-	-	3.6	2.4	16.8	-	0.6	1.2	25.2
75-77	1.1	-	-	1.1	0.9	10.8	2.0	2.1	2.7	20.7
78-80	1.0	-	-	0.5	0.5	8.8	2.0	3.0	3.1	18.9
81-83	-	-	-	-	-	4.8	-	6.0	3.6	14.4
84-86	-	-	-	-	-	2.4	-	3.9	4.2	10.5
87-89	-	-	-	-	-	-	-	1.8	4.8	6.6
90-92	-	-	-	-	-	-	0.5	0.8	2.3	3.6
93-95	0.2	-	-	-	-	-	0.7	0.7	1.8	3.4
96-98	0.8	-	-	-	-	-	0.8	0.8	1.7	4.1
99-101	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-	-	-
Total	6	2	44	18	9	63	6	20	27	195

1) Commercial landings - measurements made of "Total" length.

TABLE 29 GERMANY - 1956 COD AGE LENGTH KEY [1] by Arno Meyer

OTTER TRAWLERS 1D October Serial No.88

Year-Class	?	1953	1952	1951	1950	1949	1948	1947	1946	1945		Total
Age	?	3	4	5	6	7	8	9	10	11	>11	
3 cm. Group	ADJUSTED NUMBERS											
30-32	-	-	-	-	-	-	-	-	-	-	-	-
33-35	-	-	-	-	-	-	-	-	-	-	-	-
36-38	-	-	-	-	-	-	-	-	-	-	-	-
39-41	-	-	-	-	-	-	-	-	-	-	-	-
42-44	0.8	0.8	1.7	-	-	-	-	-	-	-	-	3.3
45-47	0.2	0.2	4.8	1.0	-	-	-	-	-	-	-	6.2
48-50	-	-	5.0	1.5	-	-	-	-	-	-	-	6.5
51-53	-	-	3.0	3.0	-	-	-	-	-	-	-	6.0
54-56	-	-	1.5	3.9	1.8	0.3	-	-	-	-	-	7.5
57-59	-	-	-	4.8	3.6	0.6	-	-	-	-	-	9.0
60-62	1.0	-	-	1.8	8.1	1.1	-	0.5	-	-	-	12.5
63-65	1.0	-	-	1.0	8.5	1.5	0.1	1.0	-	-	-	13.1
66-68	-	-	-	-	6.0	3.0	0.6	3.0	-	-	-	12.6
69-71	-	-	-	-	3.6	3.6	0.9	4.8	0.3	0.9	-	14.1
72-74	-	-	-	-	1.2	4.2	1.2	6.6	0.6	1.8	-	15.6
75-77	1.0	-	-	-	0.2	1.7	2.2	7.1	0.6	1.3	-	14.1
78-80	1.1	-	-	-	-	1.0	2.0	7.0	0.9	1.6	-	13.6
81-83	0.6	-	-	-	-	-	-	6.0	2.4	3.6	-	12.6
84-86	0.3	-	-	-	-	-	-	4.2	1.5	3.0	0.3	9.3
87-89	-	-	-	-	-	-	-	2.4	0.6	2.4	0.6	6.0
90-92	1.0	-	-	-	-	-	-	0.4	0.6	1.4	0.1	3.5
93-95	1.0	-	-	-	-	-	-	-	0.5	1.0	-	2.5
96-98	-	-	-	-	-	-	-	-	-	1.0	1.0	2.0
99-101	-	-	-	-	-	-	-	-	-	1.0	-	1.0
102-104	-	-	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-	-	-	-	-
Total	8	1	16	17	33	17	7	43	8	19	2	171

[1] Commercial landings - measurements made of "Total" length.

TABLE 30 GERMANY - 1956 COD AGE LENGTH KEY [1] by Arno Meyer

OTTER TRAWLERS 1D-F November Serial No.92

Year-Class	?	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944		Total
Age	?	3	4	5	6	7	8	9	10	11	12	>12	
3 cm. Group	ADJUSTED NUMBERS												
30-32	-	-	-	-	-	-	-	-	-	-	-	-	-
33-35	-	-	-	-	-	-	-	-	-	-	-	-	-
36-38	-	-	-	-	-	-	-	-	-	-	-	-	-
39-41	-	-	-	-	-	-	-	-	-	-	-	-	-
42-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-47	-	-	-	-	-	-	-	-	-	-	-	-	-
48-50	-	1.0	0.7	0.4	-	-	-	-	-	-	-	-	2.1
51-53	-	-	4.2	2.4	-	-	-	-	-	-	-	-	6.6
54-56	0.3	-	2.1	6.9	2.4	0.3	-	-	-	-	-	-	12.0
57-59	0.6	-	-	11.4	4.8	0.6	-	-	-	-	-	-	17.4
60-62	1.1	-	0.5	4.9	12.3	2.1	-	-	-	-	-	-	20.9
63-65	1.0	-	0.5	3.0	13.2	2.6	-	-	-	-	-	-	20.3
66-68	-	-	-	-	10.2	3.6	-	-	-	-	-	-	13.8
69-71	0.3	-	-	-	6.9	4.8	0.3	1.2	-	-	-	0.3	13.8
72-74	0.6	-	-	-	3.6	6.0	0.6	2.4	-	-	-	0.6	13.8
75-77	1.1	-	-	-	1.1	5.5	0.6	6.9	1.0	1.0	0.5	0.1	17.8
78-80	1.2	-	-	-	0.5	4.5	0.6	7.3	1.0	1.5	0.5	-	17.1
81-83	1.2	-	-	-	-	-	0.6	4.8	-	3.0	-	-	9.6
84-86	0.6	-	-	-	-	-	0.3	2.7	0.3	3.6	-	0.6	8.1
87-89	-	-	-	-	-	-	-	0.6	0.6	4.2	-	1.2	6.6
90-92	-	-	-	-	-	-	-	0.1	0.1	3.2	-	0.2	3.6
93-95	0.1	-	-	-	-	-	-	-	-	3.0	0.1	0.1	3.3
96-98	0.6	-	-	-	-	-	-	-	-	3.0	0.6	0.6	4.8
99-101	0.3	-	-	-	-	-	-	-	-	1.5	0.3	0.3	2.4
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-	-	-	-	1.5	1.5
111-113	-	-	-	-	-	-	-	-	-	-	-	0.5	0.5
114-116	-	-	-	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-	-	-	-	2.2	2.2
123-125	-	-	-	-	-	-	-	-	-	-	-	0.8	0.8
126-128	-	-	-	-	-	-	-	-	-	-	-	0.5	0.5
129-131	-	-	-	-	-	-	-	-	-	-	-	0.5	0.5
132-134	-	-	-	-	-	-	-	-	-	-	-	2.0	2.0
144-146	-	-	-	-	-	-	-	-	-	-	-	1.0	1.0
Total	9	1	8	29	55	30	3	26	3	24	2	13	203

1) Commercial landings - measurements made of "Total" length.

TABLE 31 GERMANY - 1956 COD AGE LENGTH KEY [1] by Arno Meyer

OTTER TRAWLERS 1F July/August Serial No.78

Year-Class	?	1951	1950	1949	1948	1947	1946	1945		Total
Age	?	5	6	7	8	9	10	11	>11	
3 cm. Group				A D J U S T E D N U M B E R S						
30-32	-	-	-	-	-	-	-	-	-	-
33-35	-	-	-	-	-	-	-	-	-	-
36-38	-	-	-	-	-	-	-	-	-	-
39-41	-	-	-	-	-	-	-	-	-	-
42-44	-	-	-	-	-	-	-	-	-	-
45-47	-	0.5	0.8	-	-	-	-	-	-	1.3
48-50	-	3.0	5.8	0.2	-	-	-	-	-	9.0
51-53	-	3.0	9.6	1.2	-	-	-	-	-	13.8
54-56	-	1.5	9.9	1.2	-	-	-	-	-	12.6
57-59	-	-	10.2	1.2	-	-	-	-	-	11.4
60-62	-	-	7.7	3.2	0.5	1.0	-	-	-	12.4
63-65	0.1	-	6.4	4.3	0.6	2.3	-	0.2	-	13.9
66-68	0.6	-	2.4	7.8	0.6	7.8	-	1.2	-	20.4
69-71	0.9	-	1.2	6.3	0.6	6.6	0.3	1.5	0.3	17.7
72-74	1.2	-	-	4.8	0.6	5.4	0.6	1.8	0.6	15.0
75-77	0.2	-	-	2.3	0.1	3.9	0.6	1.8	0.6	9.5
78-80	-	-	-	1.5	-	3.6	0.6	3.1	1.5	10.3
81-83	-	-	-	-	-	3.6	0.6	9.6	6.0	19.8
84-86	-	-	-	-	-	2.1	0.3	8.1	5.4	15.9
87-89	-	-	-	-	-	0.6	-	6.6	4.8	12.0
90-92	-	-	-	-	-	0.1	-	3.1	2.3	5.5
93-95	0.1	-	-	-	-	-	-	2.1	1.6	3.8
96-98	0.8	-	-	-	-	-	-	0.8	0.8	2.4
99-101	0.1	-	-	-	-	-	-	0.6	1.1	1.8
102-104	-	-	-	-	-	-	-	0.5	1.0	1.5
105-107	-	-	-	-	-	-	-	-	2.0	2.0
108-110	-	-	-	-	-	-	-	-	2.0	2.0
111-113	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-	-	-
Total	4	8	54	34	3	37	3	41	30	214

1) Commercial landings - measurements made of "Total" length.

TABLE 32 GERMANY - 1956 COD AGE LENGTH KEY [1] by Arno Meyer

OTTER TRAWLERS 1F August Serial No. 80

Year-Class	?	1952	1951	1950	1949	1948	1947	1946	1945		Total
Age	?	4	5	6	7	8	9	10	11	>11	
3 cm. Group	ADJUSTED NUMBERS										
30-32	-	-	-	-	-	-	-	-	-	-	-
33-35	-	-	-	-	-	-	-	-	-	-	-
36-38	-	-	-	-	-	-	-	-	-	-	-
39-41	-	-	-	-	-	-	-	-	-	-	-
42-44	-	-	-	-	-	-	-	-	-	-	-
45-47	-	-	-	-	-	-	-	-	-	-	-
48-50	-	-	-	-	-	-	-	-	-	-	-
51-53	-	0.6	0.6	5.0	-	-	-	-	-	-	6.2
54-56	1.2	0.4	0.7	15.3	1.8	-	-	-	-	-	19.4
57-59	2.4	-	0.6	24.6	3.6	-	-	-	-	-	31.2
60-62	0.4	-	0.1	23.1	8.1	1.0	2.0	-	-	-	34.7
63-65	0.5	-	-	20.4	9.5	1.4	3.1	-	0.2	-	35.1
66-68	3.0	-	-	8.4	12.0	2.4	6.6	-	1.2	-	33.6
69-71	2.4	-	-	4.5	9.9	1.2	5.7	-	1.8	-	25.5
72-74	1.8	-	-	0.6	7.8	-	4.8	-	2.4	-	17.4
75-77	0.3	-	-	0.1	1.8	-	6.8	1.0	0.4	-	10.4
78-80	-	-	-	-	0.5	0.1	6.2	1.0	0.6	0.5	8.9
81-83	-	-	-	-	-	0.6	1.2	-	3.6	3.0	8.4
84-86	-	-	-	-	-	0.3	1.5	-	6.6	4.5	12.9
87-89	-	-	-	-	-	-	1.8	-	9.6	6.0	17.4
90-92	0.5	-	-	-	-	-	0.3	-	11.6	4.5	16.9
93-95	0.5	-	-	-	-	-	-	-	11.0	4.8	16.3
96-98	-	-	-	-	-	-	-	-	6.0	7.8	13.8
99-101	-	-	-	-	-	-	-	-	4.2	5.4	9.6
102-104	-	-	-	-	-	-	-	-	2.4	3.0	5.4
105-107	-	-	-	-	-	-	-	-	0.4	1.5	1.9
108-110	-	-	-	-	-	-	-	-	-	0.3	0.3
111-113	-	-	-	-	-	-	-	-	-	1.5	1.5
114-116	-	-	-	-	-	-	-	-	-	1.2	1.2
117-119	-	-	-	-	-	-	-	-	-	-	-
120-122	1.0	-	-	-	-	-	-	-	-	-	1.0
150-152	-	-	-	-	-	-	-	-	-	1.0	1.0
Total	14	1	2	102	55	7	40	2	62	45	330

[1] Commercial landings - measurements made of "Total" length.

TABLE 33 GERMANY - 1956 COD AGE LENGTH KEY [1] by Arno Meyer

OTTER TRAWLERS 1F November Serial No.93

Year-Class	?	1952	1951	1950	1949	1948	1947	1946	1945		Total
Age	?	4	5	6	7	8	9	10	11	>11	
3 cm. Group				A D J U S T E D N U M B E R S							
30-32	-	-	-	-	-	-	-	-	-	-	-
33-35	-	-	-	-	-	-	-	-	-	-	-
36-38	-	-	-	-	-	-	-	-	-	-	-
39-41	-	-	-	-	-	-	-	-	-	-	-
42-44	-	-	-	-	-	-	-	-	-	-	-
45-47	0.5	0.5	1.5	-	-	-	-	-	-	-	2.5
48-50	0.5	0.5	1.9	0.7	0.1	-	-	-	-	-	3.7
51-53	-	-	2.4	4.2	0.6	-	-	-	-	-	7.2
54-56	0.3	-	1.2	8.4	0.9	-	-	-	-	-	10.8
57-59	0.6	-	-	12.6	1.2	-	-	-	-	-	14.4
60-62	1.1	-	-	9.1	3.2	0.5	-	-	-	-	13.9
63-65	1.1	-	-	7.8	3.7	0.6	0.6	-	0.1	-	13.9
66-68	0.6	-	-	4.8	4.2	0.6	3.6	-	0.6	-	14.4
69-71	1.2	-	-	3.0	3.6	0.3	6.0	-	1.8	1.2	17.1
72-74	1.8	-	-	1.2	3.0	-	8.4	-	3.0	2.4	19.8
75-77	0.3	-	-	0.2	1.0	0.5	6.4	0.5	5.0	1.9	15.8
78-80	-	-	-	-	0.5	0.5	5.2	0.5	5.2	1.8	13.7
81-83	-	-	-	-	-	-	1.2	-	4.2	1.8	7.2
84-86	0.3	-	-	-	-	-	0.9	-	4.5	2.7	8.4
87-89	0.6	-	-	-	-	-	0.6	-	4.8	3.6	9.6
90-92	1.6	-	-	-	-	-	0.6	-	4.8	3.1	10.1
93-95	1.5	-	-	-	-	-	0.5	-	4.0	2.9	8.9
96-98	-	-	-	-	-	-	-	-	-	2.4	2.4
99-101	-	-	-	-	-	-	-	-	-	1.2	1.2
>101	-	-	-	-	-	-	-	-	-	4.0	4.0
Total	12	1	7	52	22	3	34	1	38	29	199

[1] Commercial landings - measurements made of "Total" length.

TABLE 34 GERMANY 1956 COD - LENGTH/ WEIGHT[1] by Arno Meyer

	1D FYLLA BANK 22-28 May		1F KAP FARVEL 15-16 Nov.	
cm	No. of Fish	Mean wt. gm.	No. of Fish	Mean wt. gm.
60	10	1619	10	1653
61	8	1759	10	1793
62	8	1719	6	1798
63	8	1742	8	1933
64	8	1906	10	1945
65	8	2082	9	2162
66	7	2109	9	2165
67	10	2129	9	2299
68	8	2318	10	2368
69	9	2374	8	2567
70	8	2401	8	2634
71	8	2459	9	2768
72	9	2638	8	2989
73	9	2698	10	3046
74	8	2822	10	3073
75	8	2957	9	3273
76	8	3104	7	3269
77	8	3060	7	3477
78	8	3114	8	3483
79	9	3308	5	3804
80	10	3581	6	3895
81	5	3475	5	3974
82	8	3801	5	4079
83	8	3872	5	4362
84	6	4206	6	4586
85	9	4384	6	4669
86	4	4515	5	4977
87	9	4453	8	5141
88	4	4645	7	5336
89	8	5355	9	5136
TOTAL	238	-	232	-

1) Gutted Head On Weight. Commercial landings - measurements made of "Total" length.

TABLE 35 GERMANY 1956 LENGTH FREQUENCIES - REDFISH by Arno Meyer

Otter Trawlers: Commercial Landings - "Total" Length Measured

cm.	1E Jun.	1D Jul.	1F Nov.
	Frequencies in ‰		
29	3	-	-
30	3	2	-
31	3	2	-
32	8	4	-
33	5	14	-
34	8	27	3
35	24	66	3
36	34	96	7
37	50	111	10
38	71	111	10
39	71	90	38
40	63	92	93
41	58	82	123
42	71	55	99
43	76	41	79
44	66	47	72
45	61	35	75
46	53	16	86
47	47	16	86
48	37	14	62
49	24	16	31
50	18	18	24
51	13	10	17
52	11	4	24
53	11	4	21
54	11	2	14
55	13	2	10
56	11	-	-
57	16	8	-
58	14	8	-
59	9	-	-
60	11	-	-
61	9	2	1
62	6	2	1
63	6	-	-
64	4	-	4
65	1	-	4
Serial No.	69	73	92
No. of samples.	1	1	1
No. of fish measured.	239	244	197
Mean weight of fish landed [1] (Kg.) .	1.30	0.98	1.26
Wt. of Landings sampled [1] (tons).	24	5	168
Weight of total landings [1] (tons).	3011		251
Est. No. in total landings [2].	2.419		0.199

1) Round weights.
2) In millions.

TABLE 36 ICELAND - 1952-1956 by Jón Jónsson

AGE FREQUENCIES - COD[1]

OTTER TRAWLERS - Commercial Landings

Age	1952	1953	1954	1955	1956	Year-Class
	FREQUENCIES in °/oo					
4	40	-	20	-	-	
5	515	10	25	30	30	
6	90	400	175	155	210	1951
7	280	105	615	100	120	1950
8	30	360	65	440	1[illegible]	1949
9	25	35	55	[illegible]	405	1948
10	10	30	10	110	50	1947
11	10	50	5	50	45	1946
12	-	3	30	15	-	1945
13	-	3	-	60	15	1944
14	-	2	-	5	25	1943
15	-	-	-	5	-	1942
16	-	2	-	-	-	1941
						1940
						1939
						1938
						1937
No.Samples						
No. Fish						
Mean Wt.						
Wt.Landed[2]	64	18	3	9	9	
Est. No. Landed						
Mesh Size						

1) Taken from graph
2) Thousands of tons

TABLE 37 ICELAND - 1954-1956 by J. Magnússon

LENGTH FREQUENCIES - REDFISH[1]

Total Lengths

OTTER TRAWLERS - Commercial Landings

	1954	1955	1956
3 cm. Group	FREQUENCIES in °/oo		
24-26	-	5	-
27-29	10	10	2
30-32	15	30	8
33-35	20	90	25
36-38	25	115	70
39-41	75	185	100
42-44	195	230	205
45-47	325	165	266
48-50	245	110	210
51-53	45	40	70
54-56	15	5	60
57-59	10	5	20
60-62	15	5	2
63-65	5	5	10
66-68	-	-	12
No.Samples	2-3 each year		
No. Fish	Total for the three years = 3271		
Mean Wt.			
Wt.Landed[2]	15	18	7
Est. No. Landed			
Mesh Size			

1) Taken from graph
2) Thousands of Tons

TABLE 38 NORWAY - 1956 LENGTH FREQUENCIES - COD [1] by Birger Rasmussen

Subdivision	1B												1C		
Month	July						August						July		
Gear	Hand Line			Floating Long Line			Purse Seine			Hand Line			Bottom Long Line		
Sex	♂	♀	Tot.	♂	♀	Tot.	♂	♀	Tot.	♂	♀	Tot.	♂	♀	Tot.
3 cm. Group	FREQUENCIES in °/oo														
42-44	-			-	-	-	-	-	-	-	-	-	5	-	5
45-47	-	8	8	-	-	-	30	30	60	16	8	24	-	-	
48-50	-	8	8	-	-	-	30	-	30	25	16	41	-	5	5
51-53	8	-	8	-	-	-	30	60	90	16	16	32	-	5	5
54-56	32	8	40	20	10	30	180	-	180	74	33	107	5	10	15
57-59	71	16	87	30	34	64	-	-	-	33	66	99	5	20	25
60-62	111	63	174	20	25	45	30	60	90	90	57	147	5	15	20
63-65	71	48	119	44	25	69	90	30	120	41	66	107	45	30	75
66-68	48	56	104	59	59	118	30	-	30	49	33	82	71	45	116
69-71	71	63	134	69	54	123	30	60	90	33	41	74	91	56	147
72-74	48	56	104	64	94	158	30	90	120	41	66	107	116	56	172
75-77	40	32	72	84	59	143	30	60	90	8	49	57	106	61	167
78-80	40	48	88	44	69	113	30	-	30	33	25	58	56	45	101
81-83	8	24	32	15	54	69	-	30	30	-	25	25	35	45	80
84-86	8	-	8	15	34	49	-	-	-	-	25	25	15	5	20
87-89	-	-	-	5	5	10	-	30	30	-	-	-	-	20	20
90-92	8	8	16	-	10	10	-	-	-	-	-	-	-	10	10
93-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
96-98	-	-	-	-	-	-	-	-	-	-	8	8	-	-	-
99-101	-	-		-	-	-	-	-	-	-	8	8	5	-	5
102-104	-	-	-	-	-	-	-	-	-	-	-	-	5	-	5
105-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5
123-125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
144-146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total °/oo	564	438	1002	469	532	1001	540	450	990	459	542	1001	565	433	998
No. Fish	71	55	126	95	108	203	18	15	33	56	66	122	112	86	198
Mean Wt.															
Depth(m.)	ca.35			50-130			ca.40			ca.50			120-145		
Hook Size	-			#7			-			-			#7		
Serial No.	6			7			8			9			5		

(Cont'd.)

1) From original catch measured onboard.

TABLE 38 NORWAY - 1956 (cont'd)

LENGTH FREQUENCIES - COD [1]

by Birger Rasmussen

Subdivision	1D									1E			1F		
Month	July									July			August		
Gear	Bottom Long Line									Bottom Long Line			Purse Seine		
Sex	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
3 cm. Group	FREQUENCIES in °/oo														
42-44	-	-	-	4	4	8	-	-	-	12	-	12	-	-	-
45-47	-	7	7	9	-	9	5	5	10	-	6	6	-	-	-
48-50	7	7	14	13	9	22	-	-	-	12	25	37	-	-	-
51-53	-	14	14	9	4	13	5	-	5	25	-	25	-	-	-
54-56	14	14	28	26	9	35	5	5	10	19	-	19	-	-	
57-59	14	7	21	4	9	13	15	15	30	37	19	56	16	-	16
60-62	35	35	70	48	26	74	5	5	10	43	12	55	24	8	32
63-65	28	35	63	26	39	65	35	20	55	62	19	81	32	56	88
66-68	48	42	90	39	39	78	45	35	80	31	43	74	40	73	113
69-71	48	55	103	61	35	96	51	40	91	37	31	68	32	65	97
72-74	35	62	97	61	48	109	61	51	112	43	49	92	65	40	105
75-77	42	76	118	70	48	118	56	76	132	68	31	99	56	48	104
78-80	7	55	62	52	44	96	51	61	112	31	68	99	32	73	105
81-83	28	42	70	52	39	91	51	86	137	6	49	55	32	105	137
84-86	14	42	56	22	17	39	15	40	55	31	25	56	48	48	96
87-89	7	21	28	9	13	22	20	20	40	6	31	37	32	16	48
90-92	-	7	7	13	35	48	10	20	30	12	37	49	8	24	32
93-95	7	7	14	4	17	21	15	15	30	6	25	31	8	16	24
96-98	-	14	14	-	-	-	20	10	30	-	-	-	-	-	-
99-101	7	28	35	9	9	18	-	10	10	6	19	25	-	-	-
102-104	14	14	28	-	4	4	-	10	10	-	6	6	-	-	-
105-107	-	7	7	4	9	13	-	10	10	-	6	6	-	-	-
108-110	-	14	14	-	4	4	-	-	-	-	-	-	-	-	-
111-113	-	14	14	-	-	-	-	-	-	-	6	6	-	-	-
114-116	-	7	7	-	-	-	-	-	-	-	6	6	-	-	-
117-119	-	7	7	-	-	-	-	-	-	-	-	-	-	-	-
120-122	-	7	7	-	-	-	-	-	-	-	-	-	-	-	-
123-125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
144-146	7	-	7	-	-	-	-	-	-	-	-	-	-	-	-
Total °/oo	362	640	1002	535	461	996	465	534	999	487	513	1000	425	572	997
No. Fish	52	92	144	123	106	229	92	106	198	79	83	162	53	71	124
Mean Wt.															
Depth(m.)	180-240			140-160			120-180			155-200			30-50		
Hook Size	#7			#7			#7			#7			-		
Serial No.	2			3			4			1			10		

1) From original catch measured onboard

TABLE 39 NORWAY - 1956 AGE FREQUENCIES - COD [1] by Birger Rasmussen

Subdivision		1B												1C		
Month		July						August						July		
Gear		Hand Line			Floating Long Line			Purse Seine			Hand Line			Bottom Long Line		
Sex		♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
Year-Class	Age	FREQUENCIES in °/oo														
1952	4	-	16	16	-	-	-	61	30	91	41	16	57	5	5	10
1951	5	32	32	64	10	15	25	182	30	212	74	82	156	-	10	10
1950	6	262	87	349	79	103	182	182	121	303	172	164	336	10	30	40
1949	7	16	8	24	5	-	5	30	-	30	25	33	58	15	10	25
1948	8	48	87	135	44	79	123	-	30	30	41	41	82	25	61	86
1947	9	111	143	254	148	167	315	61	182	243	82	156	238	202	172	374
1946	10	24	24	48	39	30	69	-	30	30	-	8	8	50	15	65
1945	11	24	16	40	30	39	69	-	-	-	16	8	24	30	40	70
1944	12	-	-	-	10	20	30	-	-	-	-	8	8	25	5	30
1943	13	24	8	32	44	15	59	-	-	-	8	16	24	61	25	86
1942	14	8	16	24	39	44	83	30	30	60	-	8	8	116	45	161
1941	15	16	-	16	10	15	25	-	-	-	-	-	-	5	10	15
1940	16	-	-	-	5	-	5	-	-	-	-	-	-	5	-	5
1939	17	-	-	-	-	5	5	-	-	-	-	-	-	5	-	5
1938	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	19	-	-	-	5	-	5	-	-	-	-	-	-	-	-	-
1936	20	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5
1935	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	22	-	-	-	-	-	-	-	-	-	-	-	-	10	-	10
1933	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1932	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total °/oo		565	437	1002	468	532	1000	546	453	999	459	540	999	554	433	997
No. Fish		71	55	126	95	108	203	18	15	33	56	66	122	112	86	198
Mean Wt.																
Depth(m.)		ca.35			50-130			ca.40			ca.50			120-145		
Hook Size		-			#7			-			-			#7		
Serial No.		6			7			8			9			5		

1) Research sample.

(Cont'd.)

TABLE 39 NORWAY - 1956 (cont'd) AGE FREQUENCIES - COD [1] by Birger Rasmussen

Subdivision		1D									1E			1F		
Month		July									July			August		
Gear		Bottom Long Line									Bottom Long Line			Purse Seine		
Sex		♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
Year-Class	Age	FREQUENCIES in °/oo														
1952	4	-	21	21	9	-	9	5	5	10	12	6	18	-	-	-
1951	5	14	21	35	35	13	48	5	15	20	43	25	68	-	-	-
1950	6	76	76	152	70	66	136	66	20	86	105	37	142	24	16	40
1949	7	21	62	83	22	39	61	5	15	20	56	43	99	24	48	72
1948	8	42	42	84	31	52	83	20	25	45	56	43	99	40	24	64
1947	9	62	167	229	131	87	218	86	162	248	74	154	228	97	105	202
1946	10	49	49	98	35	48	83	35	81	116	49	19	68	40	48	88
1945	11	14	14	28	39	44	83	45	45	90	19	62	81	145	202	347
1944	12	21	14	35	31	-	31	35	5	40	-	19	19	16	40	56
1943	13	14	28	42	48	26	74	30	20	50	6	25	31	8	16	24
1942	14	28	62	90	44	61	105	91	81	172	25	49	74	24	48	72
1941	15	-	21	21	13	4	17	30	10	40	-	12	12	-	8	8
1940	16	-	-	-	13	4	17	-	5	5	19	12	31	8	-	8
1939	17	-	7	7	9	9	18	5	20	25	6	-	6	-	8	8
1938	18	-	7	7	-	-	-	-	-	-	6	-	6	-	-	-
1937	19	-	-	-	9	4	13	-	-	-	-	-	-	-	-	-
1936	20	-	7	7	-	-	-	-	15	15	6	-	6	-	8	8
1935	21	21	14	35	-	-	-	5	5	10	-	-	-	-	-	-
1934	22	-	28	28	-	-	-	-	-	-	6	6	12	-	-	-
1933	23	-	-	-	-	-	-	-	5	5	-	-	-	-	-	-
1932	24	-	-	-	-	4	4	-	-	-	-	-	-	-	-	-
Total °/oo		362	640	1002	539	461	1000	463	534	997	488	512	1000	426	571	997
No. Fish		52	92	144	123	106	229	92	106	198	79	83	162	53	71	124
Mean Wt.																
Depth(m.)		180-240			140-160			120-180			155-200			30-50		
Hook Size		#7			#7			#7			#7			-		
Serial No.		2			3			4			1			10		

1) Research sample.

TABLE 40 PORTUGAL - 1955 LENGTH FREQUENCIES - COD[1] by Mario Ruivo

OTTER TRAWLERS 3K	21	22	25 Oct-			9-15	12	18		
Month	Oct	Oct	4 Nov	8 Nov		Nov.	Nov	Nov	22 Nov	
3 cm. Group			FREQUENCIES in °/oo							
24-26	-	-	1	-	-	-	-	-	-	-
27-29	-	-	2	-	-	-	-	-	-	-
30-32	-	2	-	-	-	-	-	-	-	-
33-35	-	3	2	-	-	-	1	1	-	-
36-38	-	5	6	-	-	-	4	4	-	-
39-41	12	16	5	-		-	9	1	-	2
42-44	18	22	4	-		-	12	-	-	2
45-47	6	62	12	7	15	3	40	-	5	2
48-50	14	116	27	14	20	10	48	12	13	8
51-53	30	223	56	29	30	31	65	36	29	19
54-56	134	194	125	114	126	109	93	63	95	86
57-59	186	179	160	156	174	145	107	77	129	120
60-62	216	81	176	178	144	199	129	221	224	218
63-65	172	61	161	168	151	182	124	185	196	187
66-68	84	22	130	149	165	148	114	112	140	125
69-71	52	9	67	93	89	91	83	94	79	93
72-74	36	2	36	65	51	48	68	84	48	77
75-77	18	2	8	17	21	12	30	54	14	22
78-80	12	2	8	11	14	9	26	38	13	19
81-83	-	-	8	-	-	2	17	8	12	14
84-86	4	-	4	-	-	1	12	6	4	5
87-89	6	-	2	-	-	-	9	4	-	-
90-92	-	-	-	-	-	-	7	-	-	-
93-95	-	-	-	-	-	-	4	-	-	-
96-98	-	-	-	-	-	-	-	-	-	-
99-101	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-	-	-
Serial No.	2	3	4,5,6	7	7	8,9,11	10	12	13	13
Day/Night		Day		Day	Night		Day	Day	Day	Night
No. of Samples	1	1	3	1	1	3	1	1	1	1
No. of Fish Measured	100	251	300	250	200	299	532	150	250	250
Mean Wt. of Fish (Kg.)										
Wt. of Total Landings	1557						3842			
Est. No. in Total Landings										
Range of Depths										
Mesh Size										
% Males	50		45			48				

1) Commercial catch after discarding.

TABLE 41 PORTUGAL - 1955 AGE FREQUENCIES - COD[1] by Mario Ruivo

OTTER TRAWLERS 3K

Year-Class	Age	21 October ‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.	25 October-4 November ‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.	9-15 November ‰ Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.
1952	3	-	-	-	-	-	-	-	3	3	-	29.0	29.0	-	-	-	-	-	-
1951	4	-	-	-	-	-	-	-	3	3	-	38.0	38.0	-	-	-	-	-	-
1950	5	10	-	10	42.0	-	42.0	3	-	3	35.0	-	35.0	-	-	-	-	-	-
1949	6	20	10	30	46.0	43.0	45.0	10	23	33	46.0	46.4	46.2	10	10	20	53.3	50.7	52.0
1948	7	40	20	60	55.8	56.0	55.9	43	54	97	54.2	55.3	54.8	37	27	64	55.0	53.3	54.2
1947	8	100	160	260	56.9	61.6	59.8	130	90	220	59.9	58.0	59.0	97	117	214	60.0	61.9	61.0
1946	9	100	70	170	60.8	60.9	60.9	77	83	160	60.4	62.8	61.6	127	94	221	59.6	62.5	61.1
1945	10	90	50	140	63.1	61.2	62.4	93	117	210	60.9	62.5	61.7	110	127	237	61.7	64.9	63.8
1944	11	50	90	150	64.2	62.9	63.6	43	57	100	64.2	62.7	63.5	37	60	97	62.8	64.9	63.9
1943	12	10	40	50	59.0	64.3	61.7	27	53	80	64.1	70.4	67.3	20	34	54	64.2	68.6	66.9
1942	13	20	30	50	60.0	72.3	66.2	10	30	40	69.7	69.2	68.5	23	27	50	67.3	77.4	72.4
1941	14	30	30	60	66.0	68.7	67.4	-	20	20	-	73.7	73.7	10	10	20	68.3	66.7	67.5
1940	15	20	-	20	68.0	-	68.0	3	14	17	64.0	72.3	68.2	7	10	17	76.0	70.3	73.2
1939	16	-	-	-	-	-	-	7	-	7	68.0	-	68.0	3	-	3	68.0	-	68.0
1938	17	10	-	10	68.0	-	68.0	-	-	-	-	-	-	-	3	3	-	75.0	75.0
1937	18	-	-	-	-	-	-	-	7	7	-	71.5	71.5	-	-	-	-	-	-
Serial No.			2						4,5,6						8,9,11				
No.Samples			1						3						3				
No. Fish		50	50	100				135	165	300				144	155	299			
Mean Wt.																			
Wt.Landed		3K Oct.1557												3K Nov.3842					
Est. No.																			
Range Depth																			
Mesh Size			117mm.						117mm.						117mm.				

1) Based on catch after discarding

TABLE 42 PORTUGAL - 1956 LENGTH FREQUENCIES - COD[1] by Mario Ruivo

OTTER TRAWLERS - Commercial Catch after Discarding

Subdivision	1B		1D							
Month	Sept.		May			June			August	
	Day	Night	Morn.	Aft.	Night	Morn.	Aft.	Night	Day	Night
3 cm. Group	FREQUENCIES in °/oo									
39-41	9	-	4	1	3	-	-		16	12
42-44	14	-	6	2	4	-	-		24	18
45-47	28	2	9	20	10	-	3	9	60	42
48-50	37	7	14	22	16	-	3	14	58	47
51-53	54	16	24	27	28	-	3	24	54	57
54-56	61	38	41	49	47	22	9	34	72	79
57-59	64	49	50	60	56	33	12	39	81	90
60-62	177	150	76	90	94	66	72	108	129	150
63-65	170	174	96	103	114	81	101	121	128	138
66-68	155	222	137	129	154	111	159	147	126	114
69-71	98	152	160	127	144	179	149	131	86	98
72-74	69	116	171	126	140	213	144	123	66	90
75-77	32	41	87	85	74	123	126	87	33	21
78-80	23	28	64	72	58	91	98	71	30	18
81-83	6	2	20	46	26	27	42	39	24	12
84-86	2	2	12	24	14	25	32	27	8	6
87-89	1	1	9	12	8	24	27	21	-	3
90-92	-	-	9	3	6	3	12	3	3	3
93-95	-	-	7	2	4	2	8	2	2	2
96-98	-	-	3	-	-	-	-	-	-	-
99-101	-	-	1	-	-	-	-	-	-	-
Serial No.	43,49,52	43,52	4,7 12,14	4,7 12,14	4,7,12	17,19	17,19	17,19	38	38
No. Samples	3	2	4	4	3	2	2	2	1	1
No. Fish Measured	696	500	400	400	300	200	200	200	250	250
Mean Wt. Fish (Kg)										
Wt. Total Landings										
Est. No in Landings										
Mesh Size	117 mm		117 mm			117 mm			117 mm	
% Males	49	50	53	44	49	50	50	49	50	53

(Cont'd.)

1) The length frequencies for these individual samples (Serial Nos.4, 7, 12, 14, 17, 19, 38, 43, 49 and 52) are given in ICNAF Document Serial No.455.

TABLE 42 PORTUGAL - 1956 LENGTH FREQUENCIES - COD[1] by Mario Ruivo
(Cont'd.)

OTTER TRAWLERS Subarea 1 Commercial Catch after Discarding

Subdivision	1B			1C	1C-D	1D				1D-E
Date	7 Sept.	10-13 Sept.	30 Aug.-15 Sept.	13 June	22-28 May	25 May	30 May-6 June	8-15 June	27-29 Aug.	10 May-5 June
3 cm. Group	FREQUENCIES in °/oo									
39-41	-	4	3	-	-	20	-	-	18	2
42-44	-	5	4	-	-	30	-	-	28	3
45-47	16	46	16	-	6	72	-	2	65	11
48-50	19	52	25	6	10	82	3	2	68	14
51-53	24	64	44	18	18	102	8	4	72	19
54-56	40	119	91	34	40	98	16	13	86	28
57-59	48	147	114	42	52	96	20	17	92	32
60-62	200	139	160	114	97	78	82	45	92	73
63-65	200	134	153	134	108	84	102	81	98	99
66-68	200	123	138	174	131	96	140	154	110	152
69-71	125	82	97	162	156	76	190	172	101	171
72-74	88	61	76	156	168	66	214	181	96	181
75-77	16	11	32	60	92	30	92	142	38	95
78-80	13	7	26	46	70	28	70	108	25	71
81-83	8	-	14	18	24	24	24	41	-	23
84-86	3	2	6	14	14	12	18	24	-	13
87-89	-	3	2	12	9	6	14	16	-	8
90-92	-	-	-	6	3	-	4	-	4	1
93-95	-	-	-	4	2	-	2	-	4	1
96-98	-	-	-	-	-	-	-	-	4	1
99-101	-	-	-	-	-	-	-	-	1	-
Serial No.	46	G-48,50, 51	F-40,41 42,44	25	B-9,10 11,13	8	C-15,16 18,21	D-22,23 24,26	E-37, 39	A-1,2,3 5,6,20
No. Samples	1	3	4	1	4	1	4	4	2	6
No. Fish	75	224	300	100	397	100	350	348	175	556
Mean Weight										
Wt. Landed										
Est. No. in Landings										
Range Depth										
Mesh Size					117 mm					

(Cont'd.)

1) Compare with Table 44 which gives the age frequency and mean length at each age for the same samples.

TABLE 42 PORTUGAL - 1956 (Cont'd.) LENGTH FREQUENCIES - COD[1] by Mario Ruivo

OTTER TRAWLERS 2J

Date	23[2]	24[2]	22-27[2]	8-18[2]	20-27[2]	28	10	17	17
Month	Aug.	Aug.	Oct.	Nov.	Nov.	Oct.	Nov.	Nov.	Nov.
3 cm. Group	FREQUENCIES in °/oo								
39-41	11	160	6	-	18	-	16	10	4
42-44	16	230	9	-	27	-	24	15	6
45-47	47	170	23	26	75	27	72	51	72
48-50	57	160	51	55	95	54	109	86	105
51-53	76	120	107	112	134	108	183	156	171
54-56	169	90	153	160	176	154	209	188	181
57-59	215	70	176	184	196	177	222	204	186
60-62	162	-	168	185	91	180	57	96	87
63-65	130	-	137	139	76	147	47	83	76
66-68	66	-	75	48	48	81	27	57	54
69-71	24	-	40	28	27	39	17	33	32
72-74	3	-	22	18	17	18	12	21	21
75-77	15	-	12	5	6	-	3	-	3
78-80	10	-	8	5	5	1	2	-	2
81-83	-	-	1	6	3	3	-	-	-
84-86	-	-	1	6	2	3	-	-	-
87-89	-	-	1	6	2	3	-	-	-
90-92	-	-	6	10	1	3	-	-	-
93-95	-	-	4	7	1	2	-	-	-
Serial No.	1,2	3	4,5,6,7	9,10,12 13,14,16	17,18,19 20,21	8	11	15	15
Day/Night	...	...	...	...	...	Day	Day	Day	Night
No. of Samples	2	1	4	6	5	1	1	1	1
No. Fish Measured	119	41	400	475	474	200	200	200	200
Mean Wt.Fish(Kg.)									
Wt.Total Landings[3]									
Est. No. in Total Landings									
Range of Depths									
Mesh Size (mm.)	117	117	117	117	117	117	117	117	117
% Males	47	68	45	47	47	34	47	48	41

1) Catch after discardings. Measurements made at sea.
2) Taken from graphs. Table 46 gives the age frequencies for these samples.
3) Cod Landings Portuguese Otter Trawlers 2J. Sept. 15 tons; Oct. 3654 tons; Nov. 9327 tons.

TABLE 43 PORTUGAL - 1956 LENGTH FREQUENCIES - COD[1] by Mario Ruivo

DORY VESSELS

Subdivision	1B		1C	1D
Month	July	Aug.	July	June
30-32	-	-	-	-
33-35	-	-	-	-
36-38	-	-	-	-
39-41	1	-	-	-
42-44	2	-	-	-
45-47	15	10	12	-
48-50	21	18	13	-
51-53	34	33	15	-
54-56	71	70	29	6
57-59	89	88	36	9
60-62	129	144	56	39
63-65	122	141	75	72
66-68	108	135	93	138
69-71	89	110	129	180
72-74	80	98	147	201
75-77	73	56	135	129
78-80	60	45	111	108
81-83	33	22	63	66
84-86	23	13	39	34
87-89	18	9	27	18
90-92	11	2	-	-
93-95	9	2	1	-
96-98	6	2	3	-
99-101	3	1	3	-
102-104	1	-	3	-
105-107	-	-	-	-
108-110	-	-	-	-
111-113	1	-	-	-
Serial No.	30,31,32	33,34,35,36	29	28
No. of Samples	3	4	1	1
No. of Fish Measured	600	800	200	200
Mean Wt. of Fish (Kg.)				
Wt. of Total Landings	13,363	18,237	4,634	13,128
Est. No. in Landings				
Range of Depths				
Hook Size	#14 1/2	#14 1/2	#14 1/2	#14 1/2

1) Samples taken at sea from fish brought on board the mother vessel by the dories

TABLE 44 PORTUGAL - 1956 AGE FREQUENCIES - COD [1] by Mario Ruivo

by sexes, with mean length at each age

OTTER TRAWLERS Subarea 1

Year-Class	Age	1B - 7 September ‰ Frequency ♂	♀	Tot.	Mean Length ♂	♀	Tot.	1B - 10-13 September ‰ Frequency ♂	♀	Tot.	Mean Length ♂	♀	Tot.	1B - 30 August-15 September ‰ Frequency ♂	♀	Tot.	Mean Length ♂	♀	Tot.
1953	3	-	-	-	-	-	-	5	-	5	41.0	-	41.0	3	7	10	42.0	44.5	43.3
1952	4	13	14	27	48.0	47.0	47.5	67	58	125	48.5	47.9	48.2	20	20	40	49.8	49.2	49.5
1951	5	53	80	133	53.5	57.7	55.6	98	143	241	56.0	55.8	56.0	77	133	210	56.5	57.1	56.8
1950	6	280	307	587	65.3	64.6	65.0	241	196	437	62.2	63.2	62.7	184	223	407	62.4	59.9	61.2
1949	7	93	67	160	69.1	68.4	68.8	18	40	58	61.8	66.0	64.2	67	100	167	65.8	69.6	67.7
1948	8	13	27	40	67.0	68.0	67.5	31	27	58	70.4	71.0	70.7	30	30	60	72.0	72.1	72.1
1947	9	40	13	53	72.0	82.0	77.0	40	27	67	69.2	74.5	72.0	46	37	83	71.0	74.1	72.9
1946	10	-	-	-	-	-	-	4	5	9	76.0	73.0	74.5	7	-	7	76.0	-	76.0
1945	11	-	-	-	-	-	-	-	-	-	-	-	-	3	7	10	79.0	73.5	76.3
1944	12	-	-	-	-	-	-	-	-	-	-	-	-	3	3	6	89.0	80.0	84.5
1943	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1941	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1940	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Z	Z	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total ‰		492	508	1000				504	496	1000				440	560	1000			
Serial No.		46						G - 48,50,51						F-40,41,42,44					
No. Samples		1						3						4					
No. Fish		75						224						300					
Mean Wt.																			
Wt. Landed																			
Est. No.																			
Range Depth																			
Mesh Size		117 mm						117 mm						117 mm.					

1) Commercial catch after discarding.

(Cont'd.)

TABLE 44 PORTUGAL - 1956 (cont'd) — AGE FREQUENCIES - COD [1] by sexes, with mean length at each age — by Mario Ruivo

OTTER TRAWLERS — Subarea 1

Year-Class	Age	1C - 13 June °/oo Frequency ♂	♀	Tot.	1C - 13 June Mean Length ♂	♀	Tot.	1C-D - 22-28 May °/oo Frequency ♂	♀	Tot.	1C-D - 22-28 May Mean Length ♂	♀	Tot.	1D - 25 May °/oo Frequency ♂	♀	Tot.	1D - 25 May Mean Length ♂	♀	Tot.
1953	3	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	-	42.0	42.0
1952	4	-	-	-	-	-	-	-	-	-	-	-	-	30	20	50	44.0	41.5	43.0
1951	5	10	20	30	50.0	52.5	51.3	21	34	55	53.3	53.9	53.6	130	110	240	50.8	50.8	50.8
1950	6	130	190	320	62.2	62.8	62.5	121	123	244	61.4	61.6	61.5	150	80	230	56.9	56.5	56.7
1949	7	40	20	60	69.0	61.5	65.3	43	55	98	69.2	66.9	68.1	80	60	140	64.9	63.3	64.1
1948	8	70	110	180	70.0	73.0	71.5	48	58	106	69.3	72.0	71.0	60	30	90	66.7	69.7	68.1
1947	9	150	200	350	71.3	71.3	71.3	164	119	383	70.9	72.8	72.0	100	50	150	69.7	69.4	69.5
1946	10	10	-	10	66.0	-	66.0	3	25	28	73.0	72.0	72.5	10	-	10	81.0	-	81.0
1945	11	10	20	30	73.0	78.5	75.8	10	20	30	76.3	77.9	77.1	-	-	-	-	-	-
1944	12	-	-	-	-	-	-	5	5	10	76.5	74.5	75.5	-	-	-	-	-	-
1943	13	10	-	10	92.0	-	92.0	10	10	20	76.0	78.5	77.3	10	10	20	83.0	86.0	84.5
1942	14	-	10	10	-	85.0	85.0	5	12	17	82.0	85.0	83.5	20	30	50	76.5	80.3	78.4
1941	15	-	-	-	-	-	-	-	3	3	-	79.0	79.0	-	-	-	-	-	-
1940	16	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	-	77.0	77.0
Z	Z	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	20	-	-	-	-	-	-	3	-	3	86.0	-	86.0	-	-	-	-	-	-
1935	21	-	-	-	-	-	-	-	3	3	-	86.0	86.0	-	-	-	-	-	-
Total °/oo		430	570	1000				433	467	1000				590	410	1000			
Serial No.			25						B-9,10,11,13						8				
No. Samples			1						4						1				
No. Fish			100						397						100				
Mean Wt.																			
Wt. Landed																			
Est. No.																			
Range Depth																			
Mesh Size			117 mm						117 mm						117 mm				

1) Commercial catch after discarding.

(Cont'd.)

TABLE 44 PORTUGAL – 1956 AGE FREQUENCIES – COD [1] by Mario Ruivo
(cont'd) by sexes, with mean length at each age
OTTER TRAWLERS Subarea 1

Year-Class	Age	1D – 30 May-6June °/oo Frequency ♂	♀	Tot.	Mean Length ♂	♀	Tot	1D – 4–5 June °/oo Frequency ♂	♀	Tot	Mean Length ♂	♀	Tot.	1D – 27-29 August °/oo Frequency ♂	♀	Tot.	Mean Length ♂	♀	Tot.
1953	3	–	–	–	–	–	–	–	–	–	–	–	–	21	19	40	43.2	42.5	42.9
1952	4	–	–	–	–	–	–	–	–	–	–	–	–	51	63	114	46.8	48.5	47.7
1951	5	6	8	14	55.0	54.0	54.5	3	6	9	51.0	51.5	51.3	103	108	211	53.2	55.2	54.2
1950	6	66	57	123	61.6	61.6	61.6	46	29	75	61.1	62.6	62.0	114	166	280	61.6	63.1	62.4
1949	7	43	43	86	66.7	66.2	61.5	14	23	37	64.6	65.6	65.1	68	86	154	66.5	68.1	67.3
1948	8	74	52	126	69.2	68.1	68.7	46	52	98	69.0	70.2	70.0	40	34	74	71.0	70.0	70.5
1947	9	266	234	500	71.2	72.7	72.0	285	273	558	70.4	72.8	72.0	57	52	109	73.1	71.9	73.1
1946	10	37	14	51	75.6	71.8	73.7	23	29	52	77.6	78.4	78.5	–	6	6	–	93.0	93.0
1945	11	25	17	42	76.4	79.3	77.9	34	34	68	74.1	77.7	76.0	–	–	–	–	–	–
1944	12	20	8	28	75.1	76.0	75.5	26	17	43	77.3	78.5	77.0	6	–	6	97.0	–	97.0
1943	13	6	8	14	75.5	85.0	80.3	17	9	26	78.8	81.3	80.1	6	–	6	74.0	–	74.0
1942	14	6	6	12	78.5	82.5	80.0	9	20	29	80.0	82.3	81.2	–	–	–	–	–	–
1941	15	3	–	3	84.0	–	84.0	–	6	6	–	85.5	85.5	–	–	–	–	–	–
1940	16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	Σ	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1936	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1935	21	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total °/oo		552	447	999				503	498	1001				466	534	1000			
Serial No.		C-15,16,18, 21						D-22,23,24, 26						E-37,39					
No. Samples		4						4						2					
No. Fish		350						348						175					
Mean Wt.																			
Wt. Landed																			
Est. No.																			
Depth Range																			
Mesh Size		117 mm						117 mm						117 mm					

(Cont'd.)

1) Commercial catch after discarding.

TABLE 44 PORTUGAL - 1956 (cont'd)

OTTER TRAWLERS [1] Subarea 1

Year-Class	Age	1D-E - 10 May-5 June °/oo Frequency ♂♂	♀♀	Tot.	Mean Length ♂♂	♀♀	Tot.
1953	3	-	-	-	-	-	-
1952	4	4	7	11	52.5	43.5	48.0
1951	5	23	13	36	49.5	51.2	50.4
1950	6	117	57	174	60.7	61.2	61.0
1949	7	52	45	97	67.7	67.4	67.4
1948	8	58	63	121	68.8	70.3	69.5
1947	9	187	238	425	71.5	72.4	72.0
1946	10	16	32	48	75.3	74.6	76.0
1945	11	16	25	41	75.4	72.9	74.2
1944	12	-	10	10	-	73.4	73.4
1943	13	4	16	20	78.0	81.1	79.5
1942	14	4	10	14	93.0	87.3	90.2
1941	15	-	-	-	-	-	-
1940	16	2	2	4	82.0	80.0	81.0
∠	∠	-	-	-	-	-	-
1936	20	-	-	-	-	-	-
1935	21	-	-	-	-	-	-
Total °/oo		483	518	1001			
Serial No.		A-1,2,3,5,6, 20					
No. Samples		6					
No. Fish		556					
Mean Wt.							
Wt. Landed							
Est. No.							
Range Depth							
Mesh Size		117 mm					

1) Commercial catch after discarding.

TABLE 45 PORTUGAL - 1956 by Mario Ruivo

LENGTH WEIGHT DATA - COD [1]

including wts. of whole fish, livers, gonads and intestines by sexes

Length cm.	No. of Spec.	Average Wts. in Grams ♂♂ Whole Fish	Livers	Gonads	Intestines
40-44	1	780	40	>10	70
45-49	3	1055	58	>10	95
50-54	9	1302	92	>11	117
55-59	31	1693	103	>19	138
60-64	51	2113	126	>28	166
65-69	63	2556	133	>38	168
70-74	45	2975	158	>47	178
75-79	22	3588	163	63	194
80-84	6	4321	154	55	216
85-89	1	4420	70	20	220
	232				

Length cm.	No. of Spec.	Average Wts. in Grams ♀♀ Whole Fish	Livers	Gonads	Intestines
40-44	2	675	50	>10	70
45-49	6	988	54	>10	94
50-54	16	1303	81	>12	117
55-59	29	1643	105	>19	141
60-64	44	2058	144	>28	165
65-69	64	2548	158	>42	177
70-74	60	2956	149	>77	190
75-79	35	3681	164	83	230
80-84	13	4150	159	92	267
85-89	4	4680	143	98	1200
	273				

1) Survey of Samples 6, 11, 16, 23, 42, 45 and 48 from Otter Trawlers from 1D in May and June and 1B in September.

TABLE 46 PORTUGAL - 1956 AGE FREQUENCIES - COD [1] by Mario Ruivo

OTTER TRAWLERS 2J

Year-Class	Age	23 August °/oo Frequency ♂♂	♀♀	Tot.	23 August Mean Length ♂♂	♀♀	Tot.	24 August °/oo Frequency ♂♂	♀♀	Tot.	24 August Mean Length ♂♂	♀♀	Tot.	22-27 October °/oo Frequency ♂♂	♀♀	Tot.	22-27 October Mean Length ♂♂	♀♀	Tot.
1952	4	-	-	-	-	-	-	20	-	20	42.0	-	42.0	3	-	3	44.0	-	44.0
1951	5	17	-	17	44.0	-	44.0	100	150	240	41.5	41.6	41.6	6	10	15	43.0	44.8	43.9
1950	6	42	25	67	47.6	50.3	49.0	100	100	200	44.8	44.0	44.4	23	13	35	51.4	50.4	50.9
1949	7	42	17	59	49.4	55.0	52.2	70	20	100	44.6	49.0	46.8	38	53	91	52.7	53.2	53.0
1948	8	42	76	118	56.8	56.8	56.8	70	20	100	48.6	56.0	52.3	55	68	123	55.7	57.2	56.5
1947	9	67	101	168	54.3	58.4	56.4	50	20	70	51.5	51.0	51.3	73	113	186	55.6	59.3	57.5
1946	10	42	92	134	56.6	59.2	57.9	150	-	150	52.6	-	52.6	80	90	171	58.3	61.1	59.7
1945	11	109	93	202	58.4	62.1	60.3	50	-	50	51.5	-	51.5	85	83	168	59.4	61.9	60.7
1944	12	50	51	101	59.5	60.8	60.2	70	-	70	51.3	-	51.3	40	53	92	61.0	63.5	62.3
1943	13	17	25	42	67.0	65.6	66.3	-	-	-	-	-	-	10	25	35	61.5	66.3	63.9
1942	14	25	17	42	65.3	65.0	65.2	-	-	-	-	-	-	23	25	48	62.7	66.8	64.8
1941	15	17	8	25	64.5	59.0	61.8	-	-	-	-	-	-	3	10	3	66.0	68.8	67.4
1940	16	-	8	8	-	62.0	62.0	-	-	-	-	-	-	3	6	8	65.0	75.5	70.3
1939	17	-	17	17	-	71.0	71.0	-	-	-	-	-	-	6	3	8	66.5	79.0	72.8
1938	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total °/oo		470	530	1000				680	310	990				448	558	1002			
Serial No.		1,2						3						4,5,6,7					
No.Samples		2						1						4					
No. Fish		56	63	119				28	13	41				178	220	398			
Mean Wt.																			
Wt.Landed Est. No.																			
Range Depth																			
Mesh Size		117 mm						117 mm						117 mm					

1) Commercial catch after discarding.

(Cont'd.)

TABLE 46 PORTUGAL - 1956 AGE FREQUENCIES - COD [1] by Mario Ruivo

(cont'd)

OTTER TRAWLERS 2J

Year-Class	Age	8-18 November °/oo Frequency ♂	♀	Tot.	Mean Length ♂	♀	Tot.	20-27 November °/oo Frequency ♂	♀	Tot.	Mean Length ♂	♀	Tot.	Summary Mean Lengths Cm. 1956 ♂	♀	Tot.	1955 Tot.	Yearly Increase
1952	4	2	2	4	41.0	43.0	42.0	2	-	2	41.0	-	41.0	42.0	43.0	42.5	32.5	10.0
1951	5	25	23	49	44.2	44.0	44.2	4	2	6	43.0	43.0	43.0	43.6	43.9	43.8	38.9	4.9
1950	6	64	40	104	47.0	49.8	48.4	42	28	70	46.8	47.8	47.3	48.2	49.6	48.9	44.0	4.9
1949	7	57	49	106	51.0	51.6	51.3	51	79	130	51.9	52.0	52.0	51.3	53.0	52.1	47.1	5.0
1948	8	47	57	104	53.4	55.7	54.6	40	136	176	53.4	55.4	54.4	54.8	56.3	55.6	51.0	4.6
1947	9	91	104	195	55.5	55.6	55.6	89	79	168	56.2	58.6	57.4	55.4	58.0	56.7	52.8	3.9
1946	10	72	106	178	56.9	59.2	58.1	72	89	161	56.8	59.8	58.3	57.2	59.8	58.5	54.7	3.8
1945	11	64	57	121	60.6	60.5	60.5	64	81	144	57.9	59.9	58.9	59.1	61.1	60.1	55.3	4.8
1944	12	28	49	76	60.0	63.9	62.2	38	53	91	58.9	61.8	60.4	59.9	62.5	61.3	57.0	4.3
1943	13	8	25	34	60.5	69.8	65.2	13	8	21	61.5	65.0	63.3	62.6	66.7	64.6	56.2	-
1942	14	6	11	17	62.3	70.2	66.3	8	6	15	60.3	67.7	64.0	62.7	67.4	65.0	56.6	-
1941	15	6	6	13	77.6	66.0	72.1	2	4	6	71.0	67.0	69.0	69.8	65.2	67.5	48.0	-
1940	16	-	-	-	-	-	-	2	-	2	66.0	-	66.0	65.5	69.8	67.1	-	-
1939	17	-	-	-	-	-	-	2	-	2	70.0	-	70.0	68.8	75.0	71.6	-	-
1938	18	-	-	-	-	-	-	-	4	4	-	79.5	79.5	-	79.5	79.5	-	-
1937	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	20	-	-	-	-	-	-	-	-	-	-	-	-	-	81.0	81.0	-	-
Total °/oo		470	529	1001				429	569	998								
Serial No.		9,10,12,13, 14,16						17,18,19,20 21										
No.Samples		6						5										
No. Fish		222	250	472				203	268	471								
Mean Wt.																		
Wt.Landed																		
Est. No.																		
Range Depth																		
Mesh Size		117 mm						117mm										

1) Commercial catch after discarding.

TABLE 47 SPAIN - 1953-1956 LENGTH FREQUENCIES - COD [1]

by O. Rodriguez
A. Rojo

OTTER TRAWLERS

Year	1953	1954	1955					1956
Subdivision	Subarea 3	3N	3L	3N		3O	4V	3N
Month	Mar.-Apr.	June-July	May	June-July	July	May	Apr.	Sept.
3 cm. Group			FREQUENCIES in °/oo					
24-26	-	-	-	-	1	-	-	1
27-29	-	-	-	1	17	-	3	3
30-32	16	-	4	8	8	-	-	8
33-35	24	-	1	11	20	2	1	18
36-38	117	2	10	41	76	2	1	41
39-41	155	15	25	54	124	1	6	82
42-44	231	57	37	54	128	2	25	107
45-47	159	104	58	56	102	8	103	123
48-50	123	148	69	73	71	16	236	141
51-53	45	167	60	82	53	26	208	129
54-56	34	159	102	90	58	79	162	94
57-59	13	122	109	105	56	132	88	55
60-62	13	75	114	97	70	165	66	34
63-65	13	54	106	101	70	156	41	27
66-68	13	23	101	66	55	140	18	24
69-71	11	30	61	44	27	101	18	28
72-74	6	15	51	33	17	61	11	23
75-77	6	11	31	28	10	54	7	16
78-80	6	6	17	15	5	23	3	10
81-83	3	5	11	11	5	16	1	5
84-86	6	3	8	8	4	5	-	4
87-89	2	2	9	4	2	6	-	3
90-92	2	-	5	1	3	2	-	2
93-95	2	-	2	4	1	1	-	2
96-98	1	-	1	1	2	-	-	3
99-101	1	-	2	1	1	-	-	2
102-104	1	-	1	2	1	-	-	2
105-107	-	-	2	2	3	-	-	2
108-110	-	-	-	2	2	-	-	2
111-113	-	-	1	2	2	-	-	2
114-116	-	-	-	1	1	-	-	2
117-119	-	-	-	-	1	-	-	1
120-122	-	-	-	-	-	-	-	1
126-128	-	-	1	-	-	-	-	-
129-131	-	-	1	-	-	-	-	-
138-140	-	-	1	-	-	-	-	-
No. of Fish	600	2,590	1,243	2,475	4,072	1,287	708	3,499
Mean Wt. Fish								
Mesh Size m/m		113		113				110

1) Commercial catch.

TABLE 48 SPAIN - 1953 COD AGE LENGTH KEY by A. Rojo

OTTER TRAWLERS 3N March

Year-Class	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1938	1937	1936	Total
Age	0	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16	17	
3 cm. Group	ACTUAL NUMBERS																	
30-32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33-35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36-38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39-41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42-44	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
45-47	-	-	-	-	5	-	1	-	-	-	-	-	-	-	-	-	-	6
48-50	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	3
51-53	-	-	-	-	-	2	-	1	1	-	-	-	-	-	-	-	-	4
54-56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57-59	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
60-62	-	-	-	-	-	-	3	-	1	-	-	-	-	-	-	-	-	4
63-65	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
66-68	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
69-71	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	2
72-74	-	-	-	-	-	-	1	1	-	-	-	1	-	-	-	-	-	3
75-77	-	-	-	-	-	-	-	-	2	1	-	1	-	-	-	-	-	4
78-80	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	3
81-83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
84-86	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	2
87-89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90-92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
96-98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	7	3	5	10	5	2	1	2	1	-	1	-	-	37

TABLE 49 SPAIN - 1954 COD AGE LENGTH KEY by O. Rodriguez A. Rojo

OTTER TRAWLERS 3N June/July

Year-Class	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1938	1937	1936	Total
Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	16	17	18	
3 cm. Group	ACTUAL NUMBERS																	
30-32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33-35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36-38	-	-	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	5
39-41	-	-	3	10	2	-	-	-	-	-	-	-	-	-	-	-	-	15
42-44	-	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	5
45-47	-	-	-	9	7	3	-	-	-	-	-	-	-	-	-	-	-	19
48-50	-	-	-	9	18	4	-	-	-	-	-	-	-	-	-	-	-	31
51-53	-	-	-	5	27	11	1	1	-	-	-	-	-	-	-	-	-	45
54-56	-	-	-	4	22	16	1	-	-	-	-	-	-	-	-	-	-	43
57-59	-	-	-	-	6	15	10	2	1	-	-	-	-	-	-	-	-	34
60-62	-	-	-	1	4	13	5	-	-	-	-	-	-	-	-	-	-	23
63-65	-	-	-	-	3	5	6	-	-	-	-	-	-	-	-	-	-	14
66-68	-	-	-	-	-	3	4	-	-	-	-	-	-	-	-	-	-	7
69-71	-	-	-	-	1	3	3	4	-	-	-	-	-	-	-	-	-	11
72-74	-	-	-	-	-	1	2	3	1	-	-	-	-	-	-	-	-	7
75-77	-	-	-	-	-	-	1	4	1	-	-	-	-	-	-	-	-	6
78-80	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	3
81-83	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
84-86	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	2
87-89	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	2
90-92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
96-98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	1	1	2	-	-	1	-	-	5
105-107	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	2
108-110	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	2
111-113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
123-125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Total	-	-	7	42	92	75	34	16	5	3	3	2	2	-	1	1	-	283

TABLE 50 SPAIN - 1955 COD AGE LENGTH KEY by O. Rodriguez

OTTER TRAWLERS 3N June/July

Year-Class	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1938	1937	1936	Total
Age	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	
3 cm. Group	ACTUAL NUMBERS																	
24-26	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
27-29	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
30-32	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
33-35	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
36-38	-	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
39-41	-	8	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	14
42-44	-	4	7	3	-	-	-	-	-	-	-	-	-	-	-	-	-	14
45-47	-	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	6
48-50	-	-	8	10	2	-	-	-	-	-	-	-	-	-	-	-	-	20
51-53	-	-	7	6	4	1	-	-	-	-	-	-	-	-	-	-	-	18
54-56	-	-	3	8	7	1	-	-	-	-	-	-	-	-	-	-	-	19
57-59	-	-	2	5	11	1	-	-	-	-	-	-	-	-	-	-	-	19
60-62	-	-	1	6	11	2	-	-	-	-	-	-	-	-	-	-	-	20
63-65	-	-	-	1	7	2	-	-	-	-	-	-	-	-	-	-	-	10
66-68	-	-	-	1	6	3	-	-	-	-	-	-	-	-	-	-	-	10
69-71	-	-	-	-	2	3	1	-	-	-	-	-	-	-	-	-	-	6
72-74	-	-	-	-	3	1	1	-	-	-	-	-	-	-	-	-	-	5
75-77	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	2
78-80	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	2
81-83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
84-86	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	2
87-89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90-92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
96-98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	25	41	44	54	15	5	1	-	-	-	-	-	-	-	-	-	185

TABLE 51 SPAIN – 1955 COD AGE LENGTH KEY by A. Rojo

OTTER TRAWLERS 3N July/August

Year-Class	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1938	1937	1936	Total
Age	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	
3 cm. Group	ACTUAL NUMBERS																	
24-26	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
27-29	6	2	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	9
30-32	1	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
33-35	1	13	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	16
36-38	–	21	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	24
39-41	–	20	10	–	–	1	–	–	–	–	–	–	–	–	–	–	–	31
42-44	–	15	23	1	–	–	–	–	–	–	–	–	–	–	–	–	–	39
45-47	–	4	20	9	1	–	–	–	–	–	–	–	–	–	–	–	–	34
48-50	–	–	14	12	2	1	–	–	–	–	–	–	–	–	–	–	–	29
51-53	–	–	3	7	7	–	–	–	–	–	–	–	–	–	–	–	–	17
54-56	–	–	1	8	9	2	1	–	–	–	–	–	–	–	–	–	–	21
57-59	–	–	–	3	7	7	1	–	–	–	–	–	–	–	–	–	–	18
60-62	–	–	–	2	10	11	1	–	–	–	–	–	–	–	–	–	–	24
63-65	–	–	–	3	9	5	1	–	–	–	–	–	–	–	–	–	–	18
66-68	–	–	–	–	7	4	4	2	–	–	–	–	–	–	–	–	–	17
69-71	–	–	–	–	1	3	3	–	–	–	–	–	–	–	–	–	–	7
72-74	–	–	–	–	–	2	3	1	–	–	–	–	–	–	–	–	–	6
75-77	–	–	–	–	–	–	3	–	–	–	–	–	–	–	–	–	–	3
78-80	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	2
81-83	–	–	–	–	–	1	1	–	2	–	–	–	–	–	–	–	–	4
84-86	–	–	–	–	–	–	2	1	–	–	–	–	–	–	–	–	–	3
87-89	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1
90-92	–	–	–	–	–	–	–	1	2	–	–	–	–	–	–	–	–	3
93-95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
96-98	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
99-101	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
102-104	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
105-107	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
108-110	–	–	–	–	–	–	–	–	–	–	–	1	–	2	–	–	–	3
111-113	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
114-116	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
117-119	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
120-122	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	2
123-125	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
126-128	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1
129-131	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
132-134	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
135-137	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
138-140	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
141-143	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
144-146	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
147-149	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Total	8	81	77	45	53	37	23	5	4	–	–	3	–	2	1	1	1	341

TABLE 52 SPAIN - 1956 COD AGE LENGTH KEY by A. Rojo

OTTER TRAWLERS 3N September

Year-Class	1954	53	52	51	50	49	48	47	46	45	44	43	41	40	39	38	37	36	35	33	Total
Age	2	3	4	5	6	7	8	9	10	11	12	13	15	16	17	18	19	20	21	23	
3 cm. Group	ADJUSTED NUMBERS																				
24-26	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3
27-29	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7
30-32	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7
33-35	0.3	1.3	0.7	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.0
36-38	-	6.7	5.7	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.4
39-41	-	6.3	12.7	6.3	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.6
42-44	-	8.3	15.0	13.0	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37.6
45-47	-	4.7	18.3	23.7	5.7	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53.1
48-50	-	0.7	24.0	42.7	13.3	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.7
51-53	-	-	22.0	46.7	16.7	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87.1
54-56	-	-	11.3	31.7	13.7	4.7	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	62.1
57-59	-	-	3.7	12.3	15.3	8.0	2.3	0.7	-	-	-	-	-	-	-	-	-	-	-	-	42.3
60-62	-	-	0.7	2.0	7.7	9.7	3.0	2.3	-	-	-	-	-	-	-	-	-	-	-	-	25.4
63-65	-	-	-	1.3	3.7	6.0	3.0	1.0	-	-	-	-	-	-	-	-	-	-	-	-	15.0
66-68	-	-	-	1.3	1.3	8.7	6.3	1.3	1.3	-	-	-	-	-	-	-	-	-	-	-	20.2
69-71	-	-	-	0.3	0.7	7.7	6.7	5.3	2.0	-	-	-	-	-	-	-	-	-	-	-	22.7
72-74	-	-	-	-	2.3	4.0	8.0	6.3	1.3	0.7	-	-	-	-	-	-	-	-	-	-	22.6
75-77	-	-	-	-	1.0	1.0	7.7	3.3	2.3	0.3	-	-	-	-	-	-	-	-	-	-	15.6
78-80	-	-	-	-	-	0.7	4.3	2.0	3.0	-	0.7	-	-	-	-	-	-	-	-	-	10.7
81-83	-	-	-	-	-	1.0	1.7	2.0	3.0	0.7	0.3	-	-	-	0.7	-	-	-	-	-	9.4
84-86	-	-	-	-	-	0.3	0.3	1.3	1.7	1.0	-	-	-	-	0.3	-	-	-	-	-	4.9
87-89	-	-	-	-	-	-	-	0.3	1.0	0.3	-	-	-	0.7	-	-	-	-	-	-	2.3
90-92	-	-	-	-	-	-	-	0.7	1.7	0.7	-	-	-	0.3	-	-	-	-	-	-	3.4
93-95	-	-	-	-	-	-	-	1.0	2.0	0.3	-	-	-	-	-	-	-	-	-	-	3.3
96-98	-	-	-	-	-	-	-	0.3	2.0	0.7	-	1.3	-	-	-	-	-	-	-	-	4.3
99-101	-	-	-	-	-	-	-	-	0.7	1.0	0.7	1.3	-	0.7	-	-	-	-	-	-	4.4
102-104	-	-	-	-	-	-	-	-	-	0.3	0.3	0.3	0.7	0.3	-	-	0.7	-	-	-	2.6
105-107	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.7	0.7	-	0.3	0.7	-	-	2.7
108-110	-	-	-	-	-	-	-	-	-	-	-	-	0.7	1.0	0.3	0.7	0.7	0.3	-	-	3.7
111-113	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.3	0.7	0.3	0.3	-	-	-	1.9
114-116	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3	0.3	-	-	0.7	-	-	2.3
117-119	-	-	-	-	-	-	-	-	-	-	-	-	0.7	1.3	-	-	0.7	0.3	0.7	-	3.7
120-122	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.3	-	-	0.3	-	1.7	0.7	3.3
123-125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	0.3	2.3
126-128	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	-	0.7
Total	6.0	28.0	114.1	183.0	84.0	55.2	44.0	27.8	22.0	6.0	2.0	2.9	3.0	6.9	3.0	1.0	3.0	2.0	5.1	1.0	600.0

TABLE 53 SPAIN - 1954-1956 LENGTH FREQUENCIES - HADDOCK[1] by A. Rojo

OTTER TRAWLERS

Year	1954	1955				1956
Subdivision	3N	3N		3O	3P	3N
Month	June-July	July-August	December	April	March-April	September
2 cm. Group		FREQUENCIES in °/oo				
18-19	-	-	-	-	-	2
20-21	-	-	-	-	-	3
22-23	-	2	3	-	-	9
24-25	-	9	3	-	-	6
26-27	3	15	2	-	-	4
28-29	4	28	59	-	1	8
30-31	3	61	68	-	1	31
32-33	-	95	78	-	1	54
34-35	1	54	150	5	2	115
36-37	29	53	106	25	17	150
38-39	69	53	62	46	32	185
40-41	142	180	106	218	130	105
42-43	128	161	117	220	163	98
44-45	94	143	128	222	196	91
46-47	72	44	52	101	129	53
48-49	86	30	36	74	108	37
50-51	74	16	20	47	86	21
52-53	93	11	2	15	35	8
54-55	70	11	3	10	24	6
56-57	56	12	3	4	13	4
58-59	30	8	-	3	17	2
60-61	28	7	-	3	13	3
62-63	10	5	-	3	10	4
64-65	6	1	-	3	8	1
66-67	2	1	-	2	6	-
68-69	1	1	-	1	4	-
70-71	1	-	-	-	2	-
72-73	-	-	-	-	1	-
No. of Fish	1,045	6,152	395	523	1,953	2,422
Mean Wt. Fish						
Mesh Size m/m	113	113				113

1) Commercial catch

TABLE 54 SPAIN - 1953 HADDOCK AGE LENGTH KEY by A. Rojo

OTTER TRAWLERS 3N March/April Ages determined from scales

Year-Class	1949	1948	1947	1946	1945	1944	1943	Total
Age	4	5	6	7	8	9	10	
2 cm. Group	ACTUAL NUMBERS							
34-35	2	-	-	-	-	-	-	2
36-37	3	1	-	-	-	-	-	4
38-39	2	-	-	-	-	-	-	2
40-41	4	-	-	-	-	-	-	4
42-43	-	1	-	1	-	-	-	2
44-45	-	-	-	1	-	-	-	1
46-47	-	-	1	-	2	-	-	3
48-49	-	-	3	4	-	-	-	7
50-51	-	-	-	1	2	-	-	3
52-53	-	-	1	-	-	-	-	1
54-55	-	-	-	1	3	-	-	4
56-57	-	-	2	-	1	-	-	3
58-59	-	-	-	-	2	-	-	2
60-61	-	-	-	1	2	-	1	4
62-63	-	-	-	1	-	-	-	1
64-65	-	-	-	1	-	-	-	1
66-67	-	-	-	-	1	-	-	1
Total	11	2	7	11	13	-	1	45

TABLE 55 SPAIN – 1954 HADDOCK AGE LENGTH KEY by A. Rojo

OTTER TRAWLERS 3N June/July Ages determined from scales

Year-Class	1953	1952	1951	1950	1949	1948	1947	1946	1945	Total
Age	1	2	3	4	5	6	7	8	9	
2 cm. Group	ACTUAL NUMBERS									
22–23	1	–	–	–	–	–	–	–	–	1
26–27	–	3	–	–	–	–	–	–	–	3
28–29	–	5	–	–	–	–	–	–	–	5
36–37	–	–	1	3	–	–	–	–	–	4
38–39	–	–	–	2	2	–	–	–	–	2
40–41	–	–	–	7	8	–	–	–	–	15
42–43	–	–	–	7	11	1	–	–	–	19
44–45	–	–	–	1	5	–	–	–	–	6
46–47	–	–	–	–	8	3	–	–	–	11
48–49	–	–	–	–	5	11	–	–	–	16
50–51	–	–	–	–	8	9	–	1	–	18
52–53	–	–	–	–	7	8	2	–	–	17
54–55	–	–	–	–	4	13	8	–	–	25
56–57	–	–	–	–	–	4	8	6	4	22
58–59	–	–	–	–	–	2	2	4	4	12
60–61	–	–	–	–	–	–	6	7	3	16
62–63	–	–	–	–	–	–	–	1	1	2
64–65	–	–	–	–	–	–	–	1	1	2
66–67	–	–	–	–	–	–	–	–	2	2
Total	1	8	1	20	58	51	26	20	15	200

TABLE 56 SPAIN - 1955 HADDOCK AGE LENGTH KEY by A. Rojo

OTTER TRAWLERS 3N July/August Ages determined from scales

Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	Total
Age	0	1	2	3	4	5	6	7	8	9	10	11	12	
2 cm. Group	ADJUSTED NUMBERS													
20-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22-23	-	1.3	5.3	-	-	-	-	-	-	-	-	-	-	6.6
24-25	-	0.7	14.0	-	-	-	-	-	-	-	-	-	-	14.7
26-27	-	-	22.7	-	-	-	-	-	-	-	-	-	-	22.7
28-29	-	-	14.0	6.0	-	-	-	-	-	-	-	-	-	20.0
30-31	-	-	8.3	14.7	0.7	0.7	-	-	-	-	-	-	-	24.4
32-33	-	-	2.7	23.3	1.3	1.3	-	-	-	-	-	-	-	28.6
34-35	-	-	-	16.7	2.0	0.7	-	-	-	-	-	-	-	19.4
36-37	-	-	-	11.0	10.0	4.0	-	-	-	-	-	-	-	25.0
38-39	-	-	-	5.3	18.0	7.3	-	-	-	-	-	-	-	30.6
40-41	-	-	-	-	27.3	64.0	8.0	-	-	-	-	-	-	99.3
42-43	-	-	-	-	19.0	62.3	11.7	-	-	-	-	-	-	93.0
44-45	-	-	-	-	10.7	60.6	15.3	-	-	-	-	-	-	86.6
46-47	-	-	-	0.7	-	32.7	18.7	0.7	0.7	-	-	-	-	53.5
48-49	-	-	-	0.3	-	21.3	17.3	1.3	0.7	-	-	-	-	40.9
50-51	-	-	-	-	-	10.0	16.0	2.0	0.7	-	-	-	-	28.7
52-53	-	-	-	-	-	8.0	13.3	5.3	-	0.7	-	-	-	27.3
54-55	-	-	-	-	-	4.0	10.3	9.7	3.0	2.6	0.3	-	-	29.9
56-57	-	-	-	-	-	-	7.3	14.0	6.0	4.7	0.7	-	-	32.7
58-59	-	-	-	-	-	-	2.7	3.3	10.7	4.0	1.3	-	-	22.0
60-61	-	-	-	-	-	-	1.3	4.0	6.7	3.3	1.0	-	-	16.3
62-63	-	-	-	-	-	-	-	4.7	2.7	2.7	0.7	-	-	10.8
64-65	-	-	-	-	-	-	-	-	0.7	1.3	0.7	-	-	2.7
66-67	-	-	-	-	-	-	-	-	0.3	1.3	0.3	-	-	1.9
68-69	-	-	-	-	-	-	-	-	-	1.3	-	-	-	1.3
70-71	-	-	-	-	-	-	-	-	-	-	0.7	-	-	0.7
72-73	-	-	-	-	-	-	-	-	-	-	0.3	-	-	0.3
74-75	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76-77	-	-	-	-	-	-	-	-	-	-	-	-	-	-
78-79	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80-81	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82-83	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	2.0	67.0	78.0	89.0	276.9	121.9	45.0	32.2	21.9	6.0	-	-	739.9

TABLE 57 SPAIN - 1955 HADDOCK AGE LENGTH KEY by A. Rojo

OTTER TRAWLERS 30 April Ages determined from scales

Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	Total
Age	0	1	2	3	4	5	6	7	8	9	10	11	12	
2 cm. Group	ADJUSTED NUMBERS													
20-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22-23	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-25	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-27	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28-29	-	-	0.7	0.7	-	-	-	-	-	-	-	-	-	1.4
30-31	-	-	0.3	3.0	-	-	-	-	-	-	-	-	-	3.3
32-33	-	-	-	5.3	-	-	-	-	-	-	-	-	-	5.3
34-35	-	-	-	12.7	2.0	-	-	-	-	-	-	-	-	14.7
36-37	-	-	-	8.0	7.3	2.7	0.3	-	-	-	-	-	-	18.3
38-39	-	-	-	3.3	12.7	5.3	0.7	-	-	-	-	-	-	22.0
40-41	-	-	-	1.3	23.3	36.7	1.3	-	-	-	-	-	-	62.6
42-43	-	-	-	0.7	15.7	40.3	4.0	0.7	-	-	-	-	-	61.4
44-45	-	-	-	-	8.0	44.0	6.7	1.3	-	-	-	-	-	60.0
46-47	-	-	-	-	3.3	16.0	6.7	2.7	2.0	-	-	-	-	30.7
48-49	-	-	-	-	1.7	9.3	4.3	2.0	1.7	-	-	-	-	19.0
50-51	-	-	-	-	-	2.7	2.0	1.3	1.3	-	-	-	-	7.3
52-53	-	-	-	-	-	-	1.3	0.7	2.0	-	-	-	-	4.0
54-55	-	-	-	-	-	-	2.7	1.3	1.3	-	-	-	-	5.3
56-57	-	-	-	-	-	-	4.0	2.0	0.7	-	-	-	-	6.7
58-59	-	-	-	-	-	-	0.7	-	2.7	-	-	-	-	3.4
60-61	-	-	-	-	-	-	0.7	0.7	2.3	0.3	0.3	-	-	4.3
62-63	-	-	-	-	-	-	0.7	1.3	2.0	0.7	0.7	-	-	5.4
64-65	-	-	-	-	-	-	-	1.3	-	-	0.7	-	-	2.0
66-67	-	-	-	-	-	-	-	0.7	0.3	-	0.3	-	-	1.3
68-69	-	-	-	-	-	-	-	-	0.7	-	-	-	-	0.7
70-71	-	-	-	-	-	-	-	-	-	-	-	-	-	-
72-73	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74-75	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76-77	-	-	-	-	-	-	-	-	-	-	-	-	-	-
78-79	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80-81	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82-83	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	1.0	35.0	74.0	157.0	36.1	16.0	17.0	1.0	2.0	-	-	339.1

TABLE 58 SPAIN - 1955 HADDOCK AGE LENGTH KEY by A. Rojo

OTTER TRAWLERS 3P March/April Ages determined from scales

Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	Total
Age	0	1	2	3	4	5	6	7	8	9	10	11	12	
2 cm. Group	ADJUSTED NUMBERS													
20-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22-23	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-25	-	-	-	0.3	-	-	-	-	-	-	-	-	-	0.3
26-27	-	-	-	0.7	-	-	-	-	-	-	-	-	-	0.7
28-29	-	-	3.3	0.7	-	-	-	-	-	-	-	-	-	4.0
30-31	-	-	2.3	1.7	-	-	-	-	-	-	-	-	-	4.0
32-33	-	-	1.3	2.7	-	-	-	-	-	-	-	-	-	4.0
34-35	-	-	1.3	3.3	-	-	0.7	-	-	-	-	-	-	5.3
36-37	-	-	0.7	5.3	1.7	0.3	0.3	-	-	-	-	-	-	8.3
38-39	-	-	-	7.3	3.3	0.7	-	-	-	-	-	-	-	11.3
40-41	-	-	0.7	5.3	10.0	5.3	0.7	-	-	-	-	-	-	22.0
42-43	-	-	0.3	2.7	9.3	7.3	0.3	-	-	-	-	-	-	19.9
44-45	-	-	-	-	8.7	9.3	-	-	-	-	-	-	-	18.0
46-47	-	-	-	-	0.7	10.0	2.0	0.7	-	-	-	-	-	13.4
48-49	-	-	-	-	0.7	6.0	1.7	0.3	-	-	-	-	-	8.7
50-51	-	-	-	-	0.7	2.0	1.3	-	-	-	-	-	-	4.0
52-53	-	-	-	-	-	2.0	2.0	-	-	-	-	-	-	4.0
54-55	-	-	-	-	-	1.0	1.3	-	-	-	-	-	-	2.3
56-57	-	-	-	-	-	-	0.7	-	-	-	-	-	-	0.7
58-59	-	-	-	-	-	-	-	-	0.7	-	-	-	-	0.7
60-61	-	-	-	-	-	-	0.3	0.3	0.3	0.3	-	-	-	1.2
62-63	-	-	-	-	-	-	0.7	0.7	-	0.7	-	-	-	2.1
64-65	-	-	-	-	-	-	-	0.7	0.7	0.7	-	-	-	2.1
66-67	-	-	-	-	-	-	-	0.3	0.7	0.3	1.0	-	-	2.3
68-69	-	-	-	-	-	-	-	-	0.7	-	2.0	-	-	2.7
70-71	-	-	-	-	-	-	-	-	2.0	0.7	-	-	-	2.7
72-73	-	-	-	-	-	-	-	-	1.0	0.7	-	-	-	1.7
74-75	-	-	-	-	-	-	-	-	-	0.7	-	-	-	0.7
76-77	-	-	-	-	-	-	-	-	-	-	-	-	-	-
78-79	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80-81	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82-83	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	9.9	30.0	35.1	43.9	12.0	3.0	6.1	4.1	3.0	-	-	147.1

TABLE 59 SPAIN - 1956 HADDOCK AGE LENGTH KEY by A. Rojo

OTTER TRAWLERS 3N Sept. Ages determined from scales

Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	Total
Age	1	2	3	4	5	6	7	8	9	10	11	12	13	
2 cm. Group	ADJUSTED NUMBERS													
18-19	1.3	-	-	-	-	-	-	-	-	-	-	-	-	1.3
20-21	2.7	-	-	-	-	-	-	-	-	-	-	-	-	2.7
22-23	3.3	-	-	-	-	-	-	-	-	-	-	-	-	3.3
24-25	2.0	-	-	-	-	-	-	-	-	-	-	-	-	2.0
26-27	0.7	-	-	-	-	-	-	-	-	-	-	-	-	0.7
28-29	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30-31	-	-	0.7	-	-	-	-	-	-	-	-	-	-	0.7
32-33	-	-	1.3	-	-	-	-	-	-	-	-	-	-	1.3
34-35	-	-	2.0	4.0	-	-	-	-	-	-	-	-	-	6.0
36-37	-	0.3	2.0	4.0	-	-	0.3	-	-	-	-	-	-	6.6
38-39	-	0.7	2.0	4.0	-	-	0.7	-	-	-	-	-	-	7.4
40-41	-	-	-	4.0	1.3	2.7	2.3	-	-	-	-	-	-	10.3
42-43	-	-	0.3	2.0	0.7	2.3	4.3	-	-	-	-	-	-	9.6
44-45	-	-	0.7	-	-	2.0	5.3	-	-	-	-	-	-	8.0
46-47	-	-	-	-	-	2.0	7.3	0.7	-	-	-	-	-	10.0
48-49	-	-	-	-	-	2.0	6.0	0.3	-	0.3	-	-	-	8.6
50-51	-	-	-	-	-	2.0	4.7	-	-	0.7	-	-	-	7.4
52-53	-	-	-	-	-	-	0.7	-	-	-	-	-	-	0.7
54-55	-	-	-	-	-	-	0.3	-	-	-	-	-	-	0.3
56-57	-	-	-	-	-	-	-	-	-	-	-	-	-	-
58-59	-	-	-	-	-	-	-	-	-	-	0.7	-	-	0.7
60-61	-	-	-	-	-	-	-	-	-	0.3	0.3	-	-	0.6
62-63	-	-	-	-	-	-	-	-	-	0.7	-	-	-	0.7
64-65	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66-67	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68-69	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70-71	-	-	-	-	-	-	-	-	-	0.7	-	-	-	0.7
72-73	-	-	-	-	-	-	-	-	-	0.3	-	-	-	0.3
74-75	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76-77	-	-	-	-	-	-	-	-	-	0.7	-	-	-	0.7
78-79	-	-	-	-	-	-	-	-	-	0.3	-	-	-	0.3
80-81	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82-83	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	10.0	1.0	9.0	18.0	2.0	13.0	31.9	1.0	-	4.0	1.0	-	-	90.9

TABLE 60 UNITED KINGDOM - 1956 by C.E.Lucas
R.S.Wimpenny

LENGTH FREQUENCIES [1] COD

OTTER TRAWLERS - Commercial Landings

Subdivision	1F Aug. Sept. Oct. Nov.	
3 cm. Group	Raised Nos. in Tens	°/oo
45-47	95	2
48-50	380	7
51-53	1709	29
54-56	4183	72
57-59	6656	115
60-62	7778	134
63-65	7797	134
66-68	6770	117
69-71	6459	111
72-74	6148	106
75-77	2225	38
78-80	1488	26
81-83	1724	30
84-86	1466	25
87-89	1208	21
90-92	666	11
93-95	522	9
96-98	343	6
99-101	200	3
102-104	58	1
105-107	30	1
108-110	20	-
111-113	-	-
114-116	18	-
117-119	36	1
120-122	7	-
123-125	2	-
126-128	3	-
129-131	2	-
Total	57993	1000
No. of Samples		
No. of Fish Measured	986	
Mean Wt. of Fish (Kg.)	2.76	
Wt. of Total Landings	1603	
Est. No. in Landings [2]	0.58	
Mesh Size		

1) Measurements of "Total" length.
2) In Millions

TABLE 61 UNITED STATES - 1956 LENGTH FREQUENCIES - COD

by J.P.Wise
H.E.Murray

OTTER TRAWLERS - Commercial Landings

Subarea	Subarea 5			
Quarter	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.
3 cm. group	FREQUENCIES in °/oo			
30-32	-	-	1	-
33-35	-	-	3	1
36-38	-	2	3	-
39-41	6	12	11	4
42-44	8	27	59	7
45-47	32	52	81	40
48-50	110	71	115	77
51-53	202	92	122	114
54-56	217	82	95	141
57-59	135	89	78	117
60-62	95	80	97	97
63-65	85	76	81	86
66-68	35	79	61	66
69-71	45	58	51	70
72-74	25	87	40	41
75-77	5	54	25	18
78-80	-	38	16	18
81-83	-	33	18	21
84-86	-	13	5	12
87-89	-	18	6	20
90-92	-	13	7	13
93-95	-	-	6	8
96-98	-	6	4	5
99-101	-	9	4	6
102-104	-	-	4	7
105-107	-	-	4	2
108-110	-	-	1	3
111-113	-	-	2	1
114-116	-	9	-	3
117-119	-	-	-	1
120-122	-	-	-	1
No. of Samples	3	14	27	18
No. of Fish Measured	222	776	1450	1407
Mean Wt. of Fish (Kg.)	1.81	2.40	2.58	2.45
Wt. of Landings Sampled				
Wt. of Total Landings	3555	2382	3473	2251
Est. No. in Total Landings[1)]		840.8	1489.2	837.2
Range of Depths (Fms.)				
Mesh Size				

1) In Thousands

TABLE 62 UNITED STATES - 1955 LENGTH FREQUENCIES - HADDOCK[3] by J. Clark F. Dreyer

ALL GEARS[2] - Commercial Landings

Subdivision	5Z												
Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
2 cm. group	FREQUENCIES in °/oo												
32-33	1	-	-	-	-	-	-	-	-	-	1	-	-
34-35	4	2	1	1	-	3	2	2	1	3	6	2	2
36-37	15	14	5	5	8	14	8	13	8	4	17	7	10
38-39	33	31	22	26	33	37	29	33	27	26	33	12	30
40-41	82	48	49	46	58	80	67	76	61	58	70	18	63
42-43	126	68	75	74	105	126	117	120	107	97	98	32	103
44-45	138	81	84	123	152	165	164	159	147	122	102	60	137
46-47	134	108	110	126	157	144	176	182	160	138	133	97	148
48-49	85	128	126	124	120	137	155	163	156	140	124	146	138
50-51	68	106	90	124	97	108	107	107	120	103	127	160	109
52-53	56	92	77	92	64	60	66	66	82	95	99	136	77
54-55	53	74	71	63	48	36	38	31	46	70	71	105	52
56-57	52	57	64	59	40	25	24	16	25	45	40	72	37
58-59	49	48	58	32	30	15	18	9	13	28	18	42	25
60-61	39	44	43	33	28	13	11	7	6	22	18	30	20
62-63	31	31	36	23	21	10	8	5	9	11	18	19	15
64-65	14	26	37	19	13	11	4	4	7	12	12	19	12
66-67	9	19	26	14	9	4	2	3	9	9	7	18	8
68-69	5	10	15	9	7	4	1	3	8	6	3	13	6
70-71	2	6	7	4	3	2	2	2	6	4	2	3	3
72-73	1	4	4	2	2	2	1	1	1	5	2	4	2
74-75	-	2	-	2	2	2	1	-	1	1	2	2	-
76-77	1	1	-	-	-	-	-	-	-	1	-	1	-
78-79	1	-	-	-	-	-	-	-	-	-	-	-	-
80-81	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Samples	21	14	8	11	59	32	50	50	37	28	22	22	354
No. Fish Measured	1673	1846	996	1218	4249	2553	3671	3421	2674	1935	1442	1486	27164
Mean Wt. Fish (Kg.)	1.40	1.55	1.60	1.42	1.25	1.11	1.15	1.16	1.29	1.34	1.36	1.63	1.29
Wt. Landings Sampled	...	...	...	...	...	...	...	...	...	...	...	...	...
Wt. Total Landings	2558	2791	1847	2145	5897	4565	4821	4573	5129	3697	2519	2685	43228
Est. No. in Total Landings[1]	1.833	1.805	1.152	1.507	4.711	4.115	4.201	3.947	3.983	2.766	1.855	1.643	33.520

1) In Millions
2) 98% landed by Otter Trawlers
3) Same data as in Table 63.

TABLE 63 UNITED STATES - 1955 LENGTH FREQUENCIES - HADDOCK[3] by J. Clark F. Dreyer

ALL GEARS[2] - Commercial Landings

Subdivision	5Z												
Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
2 cm. Group	ACTUAL NUMBERS LANDED - IN HUNDREDS												
32-33	22	8	-	-	-	-	8	-	-	-	20	-	58
34-35	78	38	8	10	17	109	74	86	24	62	114	36	676
36-37	272	253	57	70	366	574	334	509	317	107	308	116	3283
38-39	604	562	254	394	1580	1506	1198	1294	1070	729	610	198	9999
40-41	1506	860	566	686	2752	3284	2830	2997	2440	1609	1299	298	21127
42-43	2316	1234	864	1114	4974	5205	4901	4704	4266	2667	1807	518	34570
44-45	2526	1471	962	1360	7186	6790	6886	6442	5846	3378	1880	992	46019
46-47	2464	1956	1268	1901	7409	5926	7408	7468	6371	3822	2456	1594	49733
48-49	1563	2302	1453	1874	5638	5634	6523	6116	6234	3872	2292	2398	46199
50-51	1246	1914	1042	1870	4568	4448	4494	4420	4774	2842	2348	2624	36390
52-53	1028	1668	890	1386	3031	2488	2761	2803	3252	2624	1840	2238	25809
54-55	976	1338	812	944	2263	1487	1612	1614	1829	1940	1320	1732	17467
56-57	950	1028	740	884	1906	1044	1002	952	998	1243	742	1174	12363
58-59	894	864	668	474	1404	607	744	569	520	786	331	700	8361
60-61	716	790	497	493	1306	550	462	485	256	618	328	494	6795
62-63	562	560	410	348	1006	420	314	393	354	304	340	314	5125
64-65	255	464	429	288	629	466	188	265	287	320	212	310	4013
66-67	167	338	302	214	412	184	93	213	338	259	134	292	2846
68-69	89	181	172	135	326	170	48	116	308	178	64	216	2003
70-71	34	102	79	56	160	101	64	74	253	106	29	58	1116
72-73	26	63	44	37	102	62	28	48	50	126	38	72	696
74-75	-	39	2	38	72	78	24	12	30	24	32	26	377
76-77	10	18	-	-	-	6	5	-	8	26	3	18	94
78-79	18	-	-	-	-	-	10	-	12	-	-	7	47
80-81	8	-	-	-	-	6	-	-	2	-	-	-	16
82-83	-	-	-	-	-	6	-	-	-	-	-	-	6
No. Samples	21	14	8	11	59	32	50	50	37	28	22	22	354
No. Fish Measured	1673	1846	996	1218	4249	2553	3671	3421	2674	1935	1442	1486	27164
Mean Wt. Fish (Kg.)	1.40	1.55	1.60	1.42	1.25	1.11	1.15	1.16	1.29	1.34	1.36	1.63	1.29
Wt.Landings Sampled													
Wt. Total Landings	2558	2791	1847	2145	5897	4565	4821	4773	5129	3697	2519	2685	43228
Est. No. in Total Landings[1]	1.833	1.805	1.152	1.507	4.711	4.115	4.201	3.947	3.983	2.766	1.855	1.643	33.520

1) In Millions
2) 98% landed by Otter Trawlers
3) Same data as in Table 62.

TABLE 64 UNITED STATES - 1956 LENGTH FREQUENCIES - REDFISH by G.F.Kelly G.M.Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	3 N-O-P											
Month	Mar.			Apr.			May			Sept.		
Sex	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1 cm. Group	FREQUENCIES in °/oo											
17	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	2	-	2	-	-	-	-	-	-
19	-	-	-	5	-	5	2	2	4	-	-	-
20	-	5	5	10	2	12	8	2	10	-	-	-
21	10	5	15	15	10	25	10	-	10	-	-	-
22	35	-	35	30	12	42	28	10	38	2	-	2
23	110	10	120	75	30	105	65	28	93	22	-	22
24	170	35	205	115	32	147	98	48	146	45	10	55
25	130	80	210	92	45	137	105	62	167	80	28	108
26	75	80	155	55	52	107	90	82	172	90	40	130
27	30	50	80	45	30	75	58	92	150	62	45	107
28	-	40	40	30	25	55	22	72	94	38	45	83
29	5	25	30	28	22	50	10	38	48	40	38	78
30	10	25	35	18	18	36	8	15	23	50	25	75
31	5	30	35	2	32	34	2	12	14	42	20	62
32	-	20	20	10	48	58	-	15	15	48	20	68
33	-	10	10	8	32	40	-	12	12	30	18	48
34	-	5	5	-	25	25	-	2	2	8	20	28
35	-	-	-	-	20	20	-	-	-	2	18	20
36	-	-	-	-	10	10	-	-	-	-	20	20
37	-	-	-	-	2	2	-	-	-	-	22	22
38	-	-	-	-	5	5	-	-	-	-	28	28
39	-	-	-	-	5	5	-	-	-	-	28	28
40	-	-	-	-	-	-	-	-	-	-	28	28
41	-	-	-	-	-	-	-	-	-	-	10	10
42	-	-	-	-	-	-	-	-	-	-	2	2
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	2	2
52	-	-	-	-	-	-	-	-	-	-	2	2
Total	580	420	1000	540	457	997	506	492	998	559	441	1000
No. Samples												
No. Fish Measured			100			200			200			200
Mean Wt.Fish (Kg.)												
Wt. Landings Sampled												
Wt. Total Landings			1019			2797			1183			1729
Est. No. in Total Landings												
Range of Depth (Fms.)												
Mesh Size												

(Cont'd.)

TABLE 64 UNITED STATES - 1956 LENGTH FREQUENCIES - REDFISH by G.F.Kelly
(cont'd) G.M.Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	3 N-O-P								
Month	Oct.			Nov.			Dec.		
Sex	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1 cm. Group	FREQUENCIES in °/oo								
17	-	-	-	-	-	-	2	-	2
18	-	-	-	-	-	-	5	5	10
19	-	-	-	5	-	5	5	10	15
20	2	-	2	5	-	5	2	5	7
21	8	-	8	-	-	-	18	8	26
22	15	2	17	20	15	35	50	12	62
23	35	12	47	45	30	75	55	12	67
24	62	28	90	65	40	105	110	30	140
25	75	52	127	95	55	150	135	45	180
26	68	68	136	80	70	150	92	68	160
27	58	98	156	45	95	140	50	65	115
28	30	75	105	25	80	105	10	45	55
29	28	30	58	20	40	60	5	48	53
30	38	38	76	25	15	40	-	38	38
31	20	25	45	15	10	25	-	22	22
32	8	18	26	10	30	40	-	20	20
33	-	22	22	10	20	30	-	18	18
34	-	20	20	5	-	5	-	8	8
35	-	12	12	-	5	5	-	2	2
36	2	10	12	-	5	5	-	-	-
37	2	15	17	-	10	10	-	-	-
38	-	15	15	-	10	10	-	-	-
39	-	5	5	-	-	-	-	-	-
40	-	2	2	-	-	-	-	-	-
41	-	2	2	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-
Total	451	549	1000	470	530	1000	539	461	1000
No. Samples									
No. Fish Measured			200			100			200
Mean Wt. Fish (Kg.)									
Wt. Landings Sampled									
Wt. Total Landings			1162			1098			666
Est. No. in Total Landings									
Range of Depths (Fms.)									
Mesh Size									

(Cont'd.)

TABLE 64 UNITED STATES - 1956 (cont'd) LENGTH FREQUENCIES - REDFISH by G.F.Kelly G.M.Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	4 R-S-T											
Month	May			June			July			Aug		
Sex	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1 cm. Group	FREQUENCIES in °/oo											
18	5	-	5	-	-	-	-	-	-	-	-	-
19	5	-	5	-	-	-	1	-	1	-	2	2
20	-	-	-	-	1	1	1	1	2	-	2	2
21	-	5	5	1	3	4	1	6	7	3	2	5
22	5	10	15	5	7	12	6	7	13	5	3	8
23	10	15	25	7	13	20	10	10	20	3	2	5
24	25	20	45	13	13	26	8	13	21	5	2	7
25	35	10	45	23	12	35	8	13	21	7	3	10
26	40	25	65	29	15	44	20	15	35	5	5	10
27	45	55	100	34	25	59	32	17	49	5	5	10
28	30	55	85	39	31	70	35	29	64	22	5	27
29	20	40	60	41	38	79	50	45	95	57	23	80
30	15	20	35	47	46	93	69	55	124	85	50	135
31	20	10	30	37	46	83	61	69	130	80	77	157
32	45	5	50	26	42	68	51	66	117	48	93	141
33	60	-	60	27	23	50	39	29	68	32	62	94
34	45	15	60	31	10	41	22	8	30	30	18	48
35	15	30	45	30	12	42	15	12	27	32	13	45
36	-	45	45	20	25	45	12	24	36	32	23	55
37	-	80	80	9	48	57	8	35	43	13	33	46
38	-	80	80	3	60	63	2	39	41	2	33	35
39	-	40	40	2	46	48	1	31	32	2	32	34
40	-	15	15	-	29	29	-	18	18	-	28	28
41	-	5	5	-	20	20	-	7	7	-	13	13
42	-	-	-	-	10	10	-	-	-	-	3	3
43	-	-	-	-	1	1	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
Total	420	580	1000	424	576	1000	452	549	1001	468	532	1000
No. Samples												
No. Fish Measured			100			750			500			300
Mean Wt.Fish(Kg.)												
Wt.Landings Sampled												
Wt. Total Landings			144			6440			6505			5563
Est. No. in Total Landings												
Range of Depth(Fms.)												
Mesh Size												

(Cont'd.)

TABLE 64 UNITED STATES - 1956 (cont'd) LENGTH FREQUENCIES - REDFISH by G.F.Kelly G.M.Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	4 R-S-T								
Month	Sept.			Oct.			Nov.		
Sex	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1 cm. Group	FREQUENCIES in °/oo								
18	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-
21	2	-	2	-	-	-	-	2	2
22	3	2	5	-	-	-	-	2	2
23	2	2	4	-	-	-	2	-	2
24	5	3	8	-	-	-	5	5	10
25	10	5	15	-	-	-	5	8	13
26	15	3	18	1	-	1	22	5	27
27	15	2	17	5	2	7	42	15	57
28	17	12	29	10	4	14	30	20	50
29	30	22	52	25	19	44	15	48	63
30	65	43	108	56	36	92	25	62	87
31	58	67	125	74	81	155	33	60	93
32	27	72	99	48	105	153	33	62	95
33	42	52	94	29	66	95	31	42	73
34	62	17	79	39	34	73	15	22	37
35	72	10	82	48	18	66	18	10	28
36	47	13	60	40	19	59	22	32	54
37	15	23	38	19	26	45	12	60	72
38	5	42	47	5	55	60	8	86	94
39	-	48	48	2	59	61	5	72	77
40	-	43	43	2	35	37	2	38	40
41	-	23	23	-	26	26	-	20	20
42	-	3	3	-	11	11	-	2	2
43	-	2	2	-	1	1	-	2	2
44	-	2	2	-	-	-	-	-	-
Total	492	511	1003	403	597	1000	325	675	1000
No. Samples									
No. Fish Measured			300			400			200
Mean Wt.Fish (Kg.)									
Wt.Landings Sampled									
Wt. Total Landings			2337			2206			1610
Est. No. in Total Landings									
Range of Depths(Fms.)									
Mesh Size									

(Cont'd.)

TABLE 64 UNITED STATES (cont'd) LENGTH FREQUENCIES - REDFISH by G.F.Kelly, G.M.Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	4 V-W-X																	
Month	Jan.			Feb.			Mar.			Apr.			May			June		
Sex	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1 cm. Group	FREQUENCIES in °/oo																	
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
15	2	-	2	-	-	-	-	-	-	1	-	1	1	-	1	2	-	2
16	2	-	2	4	1	5	-	-	-	1	-	1	2	-	2	1	-	1
17	5	2	7	11	6	17	-	-	-	1	1	2	2	2	4	2	1	3
18	28	2	30	16	10	26	20	-	20	9	6	15	2	3	5	5	4	9
19	38	28	66	29	20	49	60	40	100	31	15	46	7	4	11	8	8	16
20	40	58	98	50	36	86	75	75	150	63	43	106	16	5	21	15	14	29
21	98	92	190	75	69	144	80	45	125	85	73	158	27	8	35	30	18	48
22	105	112	217	97	78	175	85	60	145	82	84	166	47	19	66	54	26	80
23	60	68	128	79	64	143	70	100	170	63	86	149	61	34	95	75	54	129
24	35	55	90	36	76	112	45	70	115	41	74	115	67	47	114	80	62	142
25	12	55	67	23	61	84	20	40	60	22	62	84	61	58	119	71	65	136
26	8	32	40	16	42	58	10	40	50	10	53	63	40	70	110	48	65	113
27	2	22	24	2	42	44	5	35	40	4	35	39	22	75	97	23	52	75
28	-	15	15	-	26	26	-	15	15	1	21	22	14	64	78	13	44	57
29	-	12	12	-	15	15	-	5	5	-	14	14	13	51	64	12	41	53
30	-	5	5	-	9	9	-	5	5	-	9	9	11	43	54	9	31	40
31	-	-	-	-	4	4	-	-	-	-	5	5	9	31	40	8	18	26
32	-	-	-	-	2	2	-	-	-	-	-	-	7	18	25	5	12	17
33	-	2	2	-	-	-	-	-	-	-	2	2	5	12	17	1	6	7
34	-	2	2	-	-	-	-	-	-	-	2	2	2	10	12	-	4	4
35	-	-	-	-	-	-	-	-	-	-	-	-	1	10	11	-	4	4
36	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	-	5	5
37	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	-	2	2
38	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	2	2
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	435	562	997	438	561	999	470	530	1000	414	585	999	417	582	999	463	539	1002
No. Samples			200			400			100			700			1400			600
No. Fish Measured																		
Mean Wt.Fish (Kg.)																		
Wt.Landings Sampled			127			454			782			1105			4344			2025
Wt. Total Landings																		
Est. No. in Total Landings																		
Range of Depth(Fms)																		
Mesh Size																		

(Cont'd.)

TABLE 64 UNITED STATES - 1956 (cont'd) LENGTH FREQUENCIES - REDFISH by G.F.Kelly G.M.Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	4 V-W-X																	
Month	July			Aug.			Sept.			Oct.			Nov.			Dec.		
Sex	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1 cm. Group	FREQUENCIES in °/oo																	
14	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
15	2	-	2	-	1	1	-	-	-	2	1	3	-	-	-	-	-	-
16	2	-	2	4	2	6	-	5	5	4	1	5	-	2	2	-	-	-
17	2	-	2	10	2	12	10	10	20	10	8	18	2	8	10	5	-	5
18	6	4	10	10	2	12	20	15	35	19	15	34	5	8	13	8	5	13
19	5	10	15	8	4	12	18	25	43	25	18	43	12	5	17	20	22	42
20	15	12	27	13	8	21	38	45	83	46	29	75	28	20	48	50	38	88
21	34	14	48	28	16	44	92	68	160	80	55	135	60	35	95	60	30	90
22	45	20	65	39	38	77	112	90	202	93	85	178	92	55	147	50	22	72
23	55	18	73	42	48	90	100	88	188	91	90	181	102	115	217	70	30	100
24	60	26	86	37	39	76	70	45	115	65	79	144	82	118	200	80	55	135
25	58	38	96	26	31	57	20	30	50	26	53	79	35	55	90	60	70	130
26	50	38	88	22	22	44	2	35	37	11	30	41	12	48	60	48	58	106
27	37	40	77	27	25	52	8	25	33	5	31	36	8	52	60	25	45	70
28	27	50	77	26	31	57	5	18	23	-	17	17	-	25	25	5	30	35
29	25	50	75	25	26	51	-	8	8	-	2	2	-	8	8	-	25	25
30	15	48	63	25	28	53	-	-	-	-	4	4	-	5	5	2	28	30
31	5	42	47	19	32	51	-	-	-	-	4	4	-	2	2	2	18	20
32	5	28	33	13	28	41	-	-	-	-	1	1	-	-	-	-	10	10
33	5	28	33	15	26	41	-	-	-	-	-	-	-	-	-	-	15	15
34	3	24	27	15	29	44	-	-	-	-	-	-	-	-	-	-	12	12
35	3	12	15	12	23	35	-	-	-	-	-	-	-	-	-	-	2	2
36	3	12	15	8	26	34	-	-	-	-	-	-	-	-	-	-	-	-
37	2	14	16	6	26	32	-	-	-	-	-	-	-	-	-	-	-	-
38	-	4	4	7	18	25	-	-	-	-	-	-	-	-	-	-	-	-
39	-	4	4	2	14	16	-	-	-	-	-	-	-	-	-	-	-	-
40	-	4	4	-	8	8	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-
Total	464	540	1004	439	562	1001	495	507	1002	478	523	1001	438	561	999	485	515	1000
No. Samples																		
No. Fish Measured			300			600			200			400			200			200
Mean Wt.Fish (Kg.)																		
Wt.Landings Sampled																		
Wt. Total Landings			1177			2335			791			891			1214			1070
Est. No. in Total Landings																		
Range of Depths(Fms)																		
Mesh Size																		

(Cont'd.)

TABLE 64 UNITED STATES - 1956 (cont'd) LENGTH FREQUENCIES - REDFISH by G.F.Kelly G.M.Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	5 Y-Z														
Month	Jan.			Feb.			Mar.			Apr.			June		
Sex	♂	♀	Tot.	♂	♀	Tot.	♂	♀	Tot.	♂	♀	Tot.	♂	♀	Tot.
1 cm. Group	FREQUENCIES in °/oo														
7	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2
8	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2
9	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-
10	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-
11	-	-	-	-	-	-	-	2	2	1	1	2	-	-	-
12	-	-	-	-	-	-	-	-	-	1	-	1	2	2	4
13	-	-	-	-	-	-	2	-	2	-	1	1	5	2	7
14	-	-	-	-	-	-	2	2	4	1	1	2	4	6	10
15	-	-	-	-	-	-	-	3	3	1	1	2	4	10	14
16	-	2	2	1	-	1	2	3	5	2	4	6	8	8	16
17	-	2	2	1	1	2	6	3	9	10	6	16	14	18	32
18	5	4	9	-	2	2	16	8	24	18	16	34	34	24	58
19	15	12	27	1	4	5	23	18	41	24	28	52	35	20	55
20	22	12	34	2	4	6	32	36	68	28	26	54	14	15	29
21	26	14	40	4	4	8	38	38	76	36	26	62	15	16	31
22	25	25	50	5	8	13	38	47	85	43	29	72	16	23	39
23	20	26	46	10	10	20	42	58	100	34	31	65	14	23	37
24	34	28	62	25	14	39	40	44	84	28	28	56	17	15	32
25	54	43	97	40	20	60	32	28	60	38	25	63	24	10	34
26	52	56	108	49	32	81	37	18	55	41	22	63	34	22	56
27	55	59	114	73	38	111	54	22	76	33	28	61	50	22	72
28	66	53	119	86	34	120	46	17	63	24	30	54	73	23	96
29	56	45	101	74	42	116	38	17	55	22	22	44	73	28	101
30	25	37	62	50	48	98	36	27	63	24	20	44	42	25	67
31	-	35	35	24	50	74	16	18	34	17	22	39	15	25	40
32	2	28	30	8	44	52	2	8	10	6	20	26	6	28	34
33	2	20	22	-	39	39	-	14	14	1	22	23	2	36	38
34	-	18	18	-	46	46	-	22	22	1	28	29	-	34	34
35	-	10	10	-	39	39	-	14	14	1	22	23	2	36	38
36	-	8	8	-	26	26	-	12	12	1	28	29	-	16	16
37	-	4	4	-	18	18	-	8	8	-	27	27	-	10	10
38	-	-	-	-	12	12	-	4	4	-	21	21	-	8	8
39	-	-	-	-	8	8	-	-	-	-	14	14	-	4	4
40	-	-	-	-	4	4	-	-	-	-	6	6	-	-	-
41	-	-	-	-	2	2	-	-	-	-	2	2	-	-	-
42	-	-	-	-	1	1	-	-	-	-	1	1	-	-	-
Total	459	541	1000	453	550	1003	502	497	999	438	562	1000	505	498	1003
No. Samples			300			600			300			800			300
No. Fish Measured															
Mean Wt.Fish (Kg.)															
Wt.Landings Sampled			687			2045			1245			1773			1864
Wt. Total Landings															
Est. No. in Total Landings															
Range of Depths(Fms.)															
Mesh Size															

(Cont'd.)

TABLE 64 UNITED STATES - 1956 (cont'd) LENGTH FREQUENCIES - REDFISH by G.F.Kelly G.M.Clarke

OTTER TRAWLERS - Commercial Landings

Subdivision	5 Y-Z														
Month	July			Aug.			Sept.			Oct.			Dec.		
Sex	♂	♀	Tot.	♂	♀	Tot.	♂	♀	Tot.	♂	♀	Tot.	♂	♀	Tot.
1 cm. Group	FREQUENCIES in °/oo														
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	10	-	10
13	-	-	-	-	-	-	-	-	-	-	-	-	15	-	15
14	-	-	-	-	-	-	-	-	-	-	-	-	5	10	15
15	-	-	-	-	-	-	-	-	-	-	-	-	30	15	45
16	-	-	-	2	-	2	1	-	1	-	1	1	80	30	110
17	-	-	-	9	-	9	4	-	4	-	2	2	100	75	175
18	2	-	2	11	6	17	7	4	11	5	4	9	85	150	235
19	2	2	4	11	16	27	11	12	23	8	4	12	60	135	195
20	2	8	10	26	26	52	14	11	25	18	12	30	60	50	110
21	12	8	20	52	32	84	17	12	29	24	17	41	35	20	55
22	15	15	30	59	54	113	27	26	53	27	21	48	-	10	10
23	15	18	33	43	52	95	47	38	85	39	33	72	5	10	15
24	30	12	42	40	35	75	60	41	101	56	35	91	5	5	10
25	38	18	56	44	30	74	64	46	110	59	36	95	-	-	-
26	48	25	73	46	17	63	66	46	112	57	34	91	-	-	-
27	45	25	70	52	25	77	66	31	97	71	31	102	-	-	-
28	52	38	90	39	27	66	56	32	88	71	35	106	-	-	-
29	70	50	120	30	25	55	45	37	82	50	35	85	-	-	-
30	40	50	90	23	31	54	34	28	62	26	34	60	-	-	-
31	15	52	67	13	26	39	12	22	34	14	29	43	-	-	-
32	8	52	60	6	20	26	4	26	30	6	21	27	-	-	-
33	2	62	64	1	22	23	2	21	23	1	26	27	-	-	-
34	2	52	54	-	19	19	-	14	14	1	24	25	-	-	-
35	-	40	40	-	18	18	-	9	9	1	10	11	-	-	-
36	-	40	40	-	11	11	-	4	4	1	8	9	-	-	-
37	-	20	20	-	1	1	-	5	5	-	8	8	-	-	-
38	-	8	8	-	-	-	-	2	2	-	4	4	-	-	-
39	-	5	5	-	-	-	-	-	-	-	1	1	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	398	600	998	507	493	1000	537	467	1004	535	465	1000	490	510	1000
No. Samples															
No. Fish Measured			200			200			600			400			100
Mean Wt.Fish (Kg.)															
Wt.Landings Sampled															
Wt. Total Landings			1536			1525			1212			1066			422
Est. No. in Total Landings															
Range of Depths(Fms.)															
Mesh Size															

PACIFIC OCEANIC FISHERY
INVESTIGATIONS
AUG 25 8 39 AM '58